



Vol. IV
TRANSCRIPT OF RECORD
(Pages 2353 to 2916)

Supreme Court of the United States

OCTOBER TERM, 1944

No. 56

SOUTHERN PACIFIC COMPANY, APPELLANT,

vs.

STATE OF ARIZONA, EX REL JOE CONWAY,
ATTORNEY GENERAL OF THE STATE OF
ARIZONA

APPEAL FROM THE SUPERIOR COURT OF THE STATE OF ARIZONA,
COUNTY OF PIMA.

FILED APRIL 12, 1944.

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Q. You are required in making that inspection, a standing inspection, to walk along with the lantern to throw the light under the train?

A. That is right. To make a good inspection, the train must be standing at a point where the trainman has a good place to walk, so that you won't have to observe where you are walking and can keep your lantern on the cars. If you have a bad place to walk, you are almost forced to keep the lantern in front of you to see where you are walking; you might walk into a bridge that is not decked and cause injury to yourself.

Q. Now, is there any part of the train that each brakeman is responsible for in making this inspection?

A. Yes, assuming that the train was on the main line the entire distance, where the flagman had no opportunity to get ahead of the caboose, the swing brakeman and the head [fol. 4360] brakeman would each be held responsible for the cars in the train, the head brakeman would have half of them and the swing brakeman would have half of them. However, if the train is in several sidings where the flagman can come and properly inspect his part of the cars, then he would be held responsible.

The Court: You refer to the rear brakeman. That is the flagman?

A. The flagman, yes, sir.

Mr. Strouss: What happens if they fail to notice the defect?

A. If they fail to notice the defect, and it causes damage, they are held responsible for that failure. The responsibility is placed by a fair and impartial investigation of the employee involved.

The Court: What penalty, if any, is invoked?

A. They assess discipline in the judgment of the superintendent by demerits. It all depends upon the seriousness of the accident, what damage. We have had certain cases where wheels had been overheated by hand brakes, failure to get off hand brakes, that caused serious derailments, busted wheels, where the trainmen responsible were dismissed from the service. We have had other cases where cars have slid flat, where the trainmen was assessed ten or [fol. 4361] twenty demerits, whatever the judgment of the superintendent thought was sufficient for the failure of the rule.

Q. Are there any dangers in connection with making these inspections?

A. Yes, an inspection is a very important functioning of the trainmen for the safety of ourselves as well as all others. If the defect can be detected while the train is standing, and corrected, it may save a serious wreck, and a heavy expense to the company.

Q. Are there any dangers to the trainmen, particularly at night, in making inspections?

A. Yes, by night it is a little more difficult because visibility is not so good, and you are more liable to overlook something at night-time than you would in the day-time.

Q. Now, one of the defects you should look for are triple valves that are sticking?

A. Yes, you often find, when you are inspecting a train, a car that has failed to release, and the retainer valve is blowing which would slide the wheels when the train started. However, the brakeman finding this would get the air out of this car and bleed air out of the cylinder, placing a rock under the bleed cock to prevent any leakage, and report [fol. 4362] same to the conductor.

Q. What danger is there in a slid flat wheel?

A. A slid flat wheel, if it has slid to such an extent that it makes it condemnable, is very dangerous; it may break rails or it may go over frogs, it may bust the wheel and put the train off the tracks.

Q. Are there dangers too resulting from wheels heating?

A. Very much so, it is one of the most dangerous features that we have on freight trains.

Q. And what causes that? I mean, the wheels to heat?

A. Failure of the airbrake to properly release or handbrakes being set on the car can heat the wheels, which brings the brake shoes with pressure against the wheels.

Q. Now, what effect, if any, does the length of the train have upon the inspection?

Mr. Booth: I think we better object to that as a matter of opinion going to the merits of the case.

The Court: Read the question.

(The question was read by the reporter.)

The Court: Well, the objection is overruled. You may answer.

[fol. 4363] A. The longer the train, the longer it takes to inspect it, and the more cars in a train the more liability of defects.

[fol. 4364] Mr. Strouss:

Q. What about the time required to inspect? Does it also increase the time required to inspect?

A. Yes, it also increases the time.

Q. While your train is in motion on the road, has the trainman any duties with respect to watching and observing things?

A. Yes.

Q. Will you explain that?

A. The trainmen on the rear in the caboose take position on each side in the cupola. It is their duty to constantly observe the train while in motion and quite often get down from the cupola and go to the rear platform, ascertain if they can smell any hotboxes or sticking brakes particularly going through cuts where the drift of the wind may give them a smell. Also on curves where they can observe but on tangent track where the train has traveled any distance it is very difficult to see very far up the train and more particularly in the summertime when the heat is severe.

Q. Is there any dust to amount to anything in the territory where you operate?

A. In some particular localities there is quite a bit of dust. However, in many other places it is slag ballast [fol. 4365] and there is very little dust.

Q. What is the nature of the defects and things that you are attempting to observe?

A. Quite often the engineer is required to set the air after the train has been rolled by, by the trainmen. He may make one or more applications of the air and the train may run out a distance 40 to 50 miles before stopping. In that case it is very necessary for the conductor and the trainmen on the rear to know to the best of their ability that all the cars in the train are properly released. In other words, we want to be sure that there are none of those brakes sticking which may cause the wheels to bust. The only way we have of knowing is with our naked eye by observation to the best of our ability to look. However, at nighttime it is a little easier because if the wheel is sticking it will throw fire or if a hotbox it will start throw-

ing fire. We can see that very plainly providing we are on straight track or in curves but in the daytime it is most difficult to observe the defects on tangent track.

Q. Is your ability to observe defects affected in any way by the length of the train?

A. Very much so. The more cars you have in the train places you a greater distance from the engine and in the [fol. 4366] summertime when the heat is very great it is very difficult to see very far up the train because of the heat.

Q. Referring to plaintiff's exhibit No. 118, could you from that explain to the court what your duties as a trainman would be in observing defects in that train?

A. I assume that the train is on tangent track.

Q. It appears to be.

Mr. Mason: No, it is not. It was so testified it was on a long curve.

The Court: I believe that is the testimony, Mr. Strouss, that it was on a curve. The picture itself would indicate that.

A. Well, if it is on a curve, the trainmen in the rear would be able to observe 40 or 50 cars probably from the rear. Of course, night time there would be fire flying should there be any defects under any of the cars but in the daytime on tangent track from my experience it would be impossible to determine a defect 80 cars from the caboose or engine with a train of that length of cars.

Mr. Strouss:

Q. You would be required—

Mr. Booth (Interrupting): The witness is not qualified, [fol. 4367] he has never worked on a train of 160 cars. How could he be qualified to look at a photograph and testify to some ideal condition which he has never observed? We object to this as incompetent.

Mr. Strouss: Ideal condition?

Mr. Booth: A suppositions condition, perhaps I better use that expression. He is just making a pure guess and we object to it as incompetent.

Mr. Strouss:

Q. Your duties would require that you observe half of that train, that is, the rear brakeman half of the train for

defects and the other half would be under the rules under the observation of the head brakeman?

A. That is correct.

Q. They would be expected to observe and see any defects that were in that train?

A. That is right, under the rules they are responsible and I would say any trainman on either the engine or caboose would to the best of his ability and his eyesight observe the best he could any defects.

Q. Are there any defects in connection with the operation of that train?

Mr. Booth: That is objected to as a matter of opinion and suppositions.

[fol. 4368] The Court: Yes, the objection is sustained on the ground of the inexperience of this witness to any train of that length.

Mr. Strouss: I hadn't finished my question yet.

The Court: I beg your pardon, go ahead and finish your question.

Mr. Strouss:

Q. Are there any dangers in connection with the operation of a train in failing to observe defects in that train?

A. Yes.

The Court: Just a minute, you are referring to any train?

Mr. Strouss: I am not referring to this train, no, any train.

The Court: Objection overruled, go ahead.

A. Yes, there are many dangers.

Mr. Strouss:

Q. What are they?

A. Hot bearings, journal bearings, sticking brakes, broken flanges, defective drawbars.

Q. What would a broken flange cause?

A. A broken flange would cause the car to derail, climb the rail.

Q. Is that true of the other defects that you mentioned?

A. Yes, for example, an overheated wheel would bust [fol. 4369] and cause the train to derail; a drawbar knocked in or dropped down would cause the train to break in two and cause a sudden stop.

Q. If a trainman were to go out on top of the car, can he properly observe the train from the top of the car for defects?

A. On tangent track, no, but on curves he could see forward and backward as to the running gears of the cars, but immediately before him and behind him on top he could not.

Q. We had in the testimony heretofore some reference to slack action. Are you familiar with slack action? Do you know what that is?

A. Yes, sir, I am very familiar with slack action as I believe all trainmen in freight service are.

Q. You have observed the action of slack in trains?

A. Yes, sir.

Q. Will you just give your description of slack action in your own words, just what you mean by it?

A. In every car there is between five and seven inches of slack in your drawbars and when you assemble 60 or 70 cars together you have a car length and a half to two [fol. 4370] car lengths of slack in the train. That slack while the train is in operation has a tendency in certain localities to run in and run out. Each time the slack runs in from the rear it runs in and makes a little stop and then it jerks out, particularly where a train is going over a hogback without even the engineer setting the air, it will do that. Also trains at a speed of eight or ten miles an hour or twelve where the slack is stretched out for some reason or other as you come to an emergency stop the head cars stop immediately and the rear cars run into them which causes a very severe stop and jar on the rear end of the train and in quite a few instances injures trainmen on the rear end of the train.

Mr. Booth: We move to strike the last addition as volunteered and not called for by the question.

The Court: It may be stricken, the last portion.

Mr. Mason: Beginning with the words, "in quite a few instances."

Mr. Strouss:

Q. You say in some territory slack action is more severe than in others, that is, I believe you said on hogbacks and dips?

A. That is right.

[fol. 4371] Do you have any of that type of territory in the division or territory where you work?

A. Yes, we have some between Dragoon and Cochise, Arizona.

Q. Did you state what the effect of that slack action is so far as the caboose is concerned and the occupants when it runs in and runs out?

A. When the greater portion of the head end of the train gets over the hogback—scratch that, please. As the head end of the train approaches the hogback, the rear end of the train runs in and when the majority of the train gets over the hump back the train runs out, the slack runs out which causes a jar at the rear or the caboose and it is necessary for us trainmen to hold on to prevent—to hold on for our own safety.

The Court: Do you have any warning of that?

A. Well, sometimes we experienced men are working over that territory and we know he is going to hit it and we are on guard; inexperienced men not familiar with the territory may be off-guard and not know that.

Mr. Strouss:

Q. Assume an emergency stop by the engineer where the slack in the train is stretched out. Would you have any notice of that in all probability?

[fol. 4372] A. No, there is never any notice of an emergency stop. They are the worst that we may have.

Q. There are methods which have been adopted by the men to protect themselves, are there?

A. The only method we have to protect ourselves particularly the brakeman in the cupola is by hanging on as tight as they can to the grabiron in the cupola. The conductor downstairs has no place to hang on, he sits on the cushion and grabs hold of the cushion which sets on a locker and hangs on there to the best of his ability.

Q. In your railroading experience have you ever suffered any injuries from slack action?

A. Yes, I have been injured. I had three fractured ribs one time from slack action.

Q. What length train was that?

A. This was on May 25, 1924. I was the conductor on extra 3638 west. This was a local freight train consisting of engineer W. O. Olson. The train consisted of 50 cars,

(reading) "approaching Provo station about five-thirty P. M. engineer made an application of the air and the brake took undesired emergency action resulting in a severe jar in the rear of the train, train stopping, which threw conductor Durnil from the desk in the caboose on which [fol. 4373] he was sitting against the corner of the locker inflicting severe bruises to ribs on the right side." I would like to make a correction, 50 cars in the train, 3 loads and 47 empties. I lost nine days' work over this accident. That was entirely due to an unexpected emergency stop of the train.

Q. That was a reportable accident?

A. Yes, sir, that was a reportable accident.

Q. Have you had any other instances of slack action where you have been injured or where it was not a reportable accident?

A. I have been in several during my experience. However, there were no reports made because no damage was done and the extent of the injury was not of a serious nature.

Q. Has the length of the train any relation to slack action?

A. Yes.

Mr. Booth: That is objected to as calling for an opinion and conclusion of the witness. The rules of evidence so far have been very assiduously observed here, but here is a witness put on the stand and asked to give his opinion as to one of the essential issues in the case.

Mr. Strouss: There might be some difference of opinion as to whether these rules of evidence have been so carefully [fol. 4374] fully observed heretofore.

Mr. Booth: They have certainly been insisted on so far as I know.

The Court: The objection will be overruled.

Mr. Strouss:

Q. Was that the only reportable accident you were involved in?

A. No, I was involved in another accident due to slack action and break-in-two while acting in the capacity of rear brakeman on train second 412, engine 3635, engineer J. E. Anderson, conductor J. H. Burke, train consisted of two loads and 63 empties, 2840 M's. This occurred on

December 4, 1920, involving a personal injury to brakeman Durnil and W. C. Hughes. It happened about 3:55 P. M. Brakeman Durnil received lacerations of the lower lip; brakeman W. C. Hughes, right side strained and bruised. This was an eastbound freight train, second 412, running about eight miles per hour, had a break-in-two near Vail, Arizona, on account of knuckle breaking on car Rock Island 36713, the eleventh car from the engine. This throwing brakeman Durnil against caboose, he sustained the above injury. Also threw the brakeman W. C. Hughes, who was on the rear platform of caboose, against caboose, resulting in the above injury. Investigation develops that [fol. 4375] while train was descending a grade the pin lifter on the west end of Rock Island 55280 had raised. The slack action in the draw head permitted the pin lifter to be pulled out on account of the pin lifter chain not long enough to take up the slack, causing knuckle to open, breaking knuckle on the end of I. C. 94337, an empty gondola eight cars from the engine. Emergency knuckle was applied and train started to move and had moved the train about a train length. Then knuckle gave way on Rock Island 36713, the eleventh car from the engine, causing a heavy run in of the slack from the rear, damaging the following cars: M. C. 9563, box, derailed, superstructure demolished, steel center-sills badly twisted, trucks damaged, amount of damage \$750; C. B. & Q. 10800, box, not derailed, two sides damaged and steel centersills broken or bent, amount of damage \$200; I. C. 43337, knuckle broken, \$4; Rock Island 36713, knuckle broken, \$4. First break-in-two was due to a short lifter on car Rock Island 55280. This break-in-two so weakened the equipment that when the train pulled out to haul up the grade the weak parts gave way and second break-in-two resulted, slack not being bunched on this train on portion of the train descending the grade, [fol. 4376] break-in-two occurred on that end, slack in rear running in damaging the cars. As stated, no defect in the equipment. It consisted of two loads and 63 empties, or 2840 M's.

Mr. Mason: If I may interrupt the witness, he is evidently reading from something and not testifying from his own recollection.

The Witness: That is my own record.

Mr. Mason: Your own record. Did you survey that damage?

A. I was the brakeman on the train.

Q. And were injured, weren't you?

A. Slightly, lip injury.

Q. Reportable?

A. No, I don't believe this was reportable so far as personal injury was concerned.

Q. You went and investigated all of those cars, did you?

A. Yes, sir, I got the record.

Q. You didn't make the estimates of the damage yourself?

A. Oh, no.

Mr. Booth: What are you reading from?

Mr. Strouss: This is a copy of your testimony given in the former case which you have here to refresh your memory?

A. That is right.

[fol. 4377] Mr. Booth: What former case?

Mr. Strouss: In the case of Southern Pacific Company against K. Berry Peterson.

Mr. Mason: You mean the first Arizona Train Limit case?

Mr. Strouss: Yes, sir.

Mr. Booth: He is reading from his testimony in that case?

Mr. Strouss: Yes, he is refreshing his memory as to that accident.

The Court: We will take our mid-afternoon recess at this time.

(Thereupon a short recess was taken, after which proceedings were resumed as follows.)

[fol. 4378] Mr. Strouss: Mr. Durnil, I asked you this question, then got over to another before you answered. Has the length of the train any relation to slack action?

A. Yes, very much so. The more cars in the train, the more slack action you accumulate.

Q. Have you worked on—what length trains have you worked on, Mr. Durnil?

A. Why, I have worked on trains as high as 125 cars; possibly a little more.

Q. Now, is there, in the caboose of the freight train, any air gauge?

A. Yes, there is a conductor's valve in the cupola of the caboose.

Q. Is there a gauge there also?

A. Yes, an air gauge also.

Q. Are the trainmen required to observe that gauge?

A. Yes.

Q. Have you at different times in mountain operations observed the air gauge in the caboose?

A. Yes, sir.

Q. Has that been on both short and long trains? I mean trains of around 70 cars and trains of under 60 cars?

A. Yes, sir.

[fol. 4379] Q. Are you able to state from that whether the air pressure has been maintained on the rear of those trains?

A. Very few exceptions is the pressure maintained on the rear that is on the head end, there may be a slight deduction, maybe five pounds.

Q. Now, have you observed in mountain operation, whether or not, on trains of around 70 cars, the brakes on the rear end of the train will release at all times?

Mr. Mason: Now, I think, with all deference to the question that it is indefinite and objectionable for that reason. The "mountain operation" is a very hazy term. If that is addressed to Arizona, there are certain districts in Arizona which might be so specified. If it is addressed to other sections, they would not be so specified.

The Court: Refrain your question, Mr. Strauss.

Mr. Strauss: What territory are you operating in, Mr. Durnil?

A. Tucson to Lordsburg.

Q. In that territory you have—

A. —1.4 grade.

Q. And in that operation have you observed the operation of the brakes so as to observe whether or not the rear brakes were applying and releasing?

[fol. 4380] A. Yes, that is part of our duty to observe to the best of our ability the operation of the brakes, see that they set or release, and quite often we have to stop the engineer, because of the failure of one car, or more maybe, not releasing and wheels becoming heated.

Q. And have you had occasions where your brakes were not applying on your end of the train?

A. Well, with the heavy tonnage, exceptionally heavy tonnage, it may be difficult for the engineer to keep his pressure up on the rear in descending a grade, because of the frequent reductions he has to make from his engine to obtain the required speed. Sometimes before the rear end is properly released he is again setting them from the head end, which causes more or less slack in the rear of the train. However, with a lighter train, that condition may not exist. With a train of empties as against a train of loads, the empties brake much better than the loaded cars.

Q. Do your rules require that certain commodities be placed in particular places in the train?

A. Yes, the I. C. C. rules regarding powder or dynamite, it has to be placed at least 15 cars from the engine or 15 from [fol. 4381] the caboose; inflammables must not be put next to explosives, and they must be at least five cars from the caboose or the engine; open top cars loaded with rails, poles, or other material that may shift, are not to be placed against gasoline or explosives or ahead of the caboose.

Q. Now, do you have many trespassers in the territory?

A. Yes, we have had quite a few trespassers over the territory; in fact, so many we couldn't keep them off.

Q. Do they present any particular or peculiar problems for the trainmen in train operation?

A. Yes, they cause considerable trouble by breaking our trains in two sometimes, stepping on pin lifters, sometimes they become injured and require us to get them to some station where they can get medical aid, and I have had them turn the angle cocks in our train and stop the train because they desired to de-train at a certain point and they knew the train wasn't going to stop. That is a very serious thing for them to do and it lays us very liable to accidents or injuries.

Q. Has the length of the train any relation to the handling of trespassers?

[fol. 4382] A. Yes, they scatter all over the train from one end to the other.

Q. And that makes your problem of handling them more difficult?

A. That is correct.

Q. Now, are you familiar with the use of retainers?

Mr. Mason: Just a moment. I would like to inquire as to the purpose of the last testimony. Is it now contended that the Arizona Train Limit law is necessary in order to preserve the unusual hazards from trespassers on long trains?

Mr. Strouss: Are you inquiring of me?

Mr. Mason: Yes. I am inquiring of you. I would like the Court to take notice of the question and require counsel to respond if he will be so kind.

Mr. Strouss: I will make my argument at the present time, if counsel so desires.

The Court: Go ahead.

Mr. Mason: I would like to see the materiality. All this contention is not disclosed by the pleadings, the defendant hasn't offered any testimony with reference to this and it is not in the pleadings. I didn't know the law was passed to prevent hazards from trespassers.

[fol. 4383] The Court: Proceed.

Mr. Strouss: Read the question.

(The question was read by the reporter.)

A. Yes, sir.

Q. What are the duties of a trainman with respect to the use of retainers?

A. Well, he turns up the retainers where it is necessary and also turns them down, and it is his duty to closely observe the cars on all the retainers he turns up to see that the wheels do not overheat, and if he finds one that is overheated, it is his duty to release the retainer on that particular car.

Q. And is it necessary for him to be on top of the car to release the retainer?

A. Yes, it is necessary that he be on top.

Q. Are you familiar with the rule on the Tucson division with respect to the use of retainers?

A. Yes; it is recorded in the time-table, I believe.

The Court: You were present in court this morning when that was read?

A. Yes, sir.

Mr. Strouss: That rule provides that retainers will be used on grades of 1.4 per cent to 1.5 per cent on freight trains of [fol. 4384] less than 110 M's per operative brake when necessary in the judgment of conductor and engineer. Does the length of the train have any relation to the use or necessity for the use of retainers?

A. In this way, the length of the train which may increase the tonnage, where in the judgment of the conductor and the engineer it would be an added safety for the trainmen to use the retainers for proper brakage of the train descending that particular grade; in other words, it is my experience, if the engineer requested the retainers to be used because of meeting certain trains while descending this grade, it would be necessary for us to do that for absolute safety in assisting the engineer in properly controlling his train at the required speed, that he may be able to stop this train at a given point where opposing trains may take a siding for him or he may have to take a siding for superior trains.

The Court: Are you accustomed to using these retainers on your run between Tucson and Lordsburg?

A. No, sir, we haven't used those retainers on that particular territory for a good many years since the operation of the heavier power now. When we had the small consolidated [fol. 4385] dated engines, we did use retainers.

Mr. Strouss: Now, Mr. Durnil, is it necessary for the train crew on the rear of the train to communicate at times with the engineer?

A. Yes, we communicate by hand signals by day, lantern signals by night.

Q. And how are those signals given?

A. They are given by hand in the daytime by the brakeman in the rear, or the conductor. In other words, if you are ready to proceed, you put your hand in the air and wave it back and forth. If you want to stop, you put out both hands and throw them up and down. By night, if you want to stop, it is customary that we light a fusee where the engineer will see that fusee and know we want to stop.

Q. Now, if the signals can't be seen, what do you do?

A. If signals cannot be seen and it is determined in the judgment of the conductor that it is an emergency, under the rules he has the privilege to use the conductor's emergency valve and bring the train to a stop.

Mr. Strouss: Take the witness.

Mr. Mason: If your Honor please, it might be well to defer [fol. 4386] this witness's cross-examination. I assume it will offer no embarrassment to him to come.

Mr. Strouss: No, but for the morning I have no witnesses ready to go on.

The Court: Is there any phase of this that you might proceed with, Mr. Mason, with the understanding that the Court will recess at your convenience and permit you to finish the cross-examination in the morning?

Mr. Mason: I think I might have some questions. It would be some advantage probably to read over the testimony, then I could cut the testimony down, some of it may amount to repetition.

Cross-examination.

By Mr. Mason:

Q. Mr. Durnil, you referred to the fact that you had suffered a personal injury in a slack action accident in 1925, I think it was, wasn't it?

The Court: 1924.

Mr. Mason: 1924, yes. That was a train of less than 55 cars, wasn't it?

A. I believe it was 47 empties and three loads.

Q. My record agrees with you, except in the length of the train, which my record shows was 53 cars. It was either [fol. 4387] 50 or 53 cars, something along that line, was it not?

A. Yes, sir.

Q. Now, is that the only personal injury that you have suffered in train or train service accidents?

A. To my recollection, that is the only one due to slack action, yes, sir. As to the other one that I quoted, in the other there was no loss of time.

Q. You have suffered a personal injury in train operation on a short train since 1925, have you not?

A. The only one I can recall, Mr. Mason, is in attempting to let off some hand brakes in the Tucson yard, along about 1934 or '35, where I sprained my back, to the best of my recollection.

Q. My record indicates that on October 3rd, 1934, you suffered an 18-day disability on a 58-car train at Tucson, due to wrenching back while releasing hand brake?

A. That is correct.

Q. That was on a 58-car train?

A. I don't remember, Mr. Mason.

Q. You wouldn't dispute the fact?

A. No, I wouldn't dispute the fact.

[fol. 4388] Q. If it is shown here. Do you say that you have in your railroad career run as brakeman or conductor or both, on trains of more than 70 cars?

A. Only as a brakeman.

Q. When was that?

A. That was during my employment with the Atcheson, Topeka and Santa Fe Railway.

Q. You have never served on any Southern Pacific train of more than 70 cars?

A. Yes, I have, for a very short period between Tracy, California, and Roseville, and on one or two or three occasions between Steins, New Mexico, and Lordsburg, on the Tucson division.

Q. You served on the Stockton division, between Tracy and Roseville prior to coming to Arizona, did you not?

A. No, after coming to Arizona, then I returned to California for a short period in 1914.

Q. In 1914?

A. That is correct.

Q. Then, since 1920, except for an occasional train between Steins and Lordsburg, all your service has been on trains of 70 cars or less?

A. That is correct.

Q. With the exception that on April 29th last year you were conductor on a train of more than 70 cars?

[fol. 4389] A. No, sir.

Q. You were not?

A. No, sir.

Q. You wouldn't challenge the time return and daily report showing your signature and showing the train consist, would you?

A. Yes, I would; it is not a fact, I was not.

Q. Then all of your experience with long-train operation that you have related here this afternoon as to the inability to make inspections and to passing signals and to observing the condition of the train in motion, and the extent of the air pressure in the caboose, so far as it relates to long-train operation, is gathered from your experience in 1914 and not since?

A. No, it is gained from my experience when I first started out in 1910 to September, 1912, where I was engaged in long-train operation with the Santa Fe railroad. Having been in several break-in-two's and emergency stops

in long-train operation, I had an opportunity to gain knowledge at that time of long-train operation.

Q. That was now 29 years ago?

A. Yes, sir.

Q. You have no experience with long-train operation on [fol. 4390] Southern Pacific lines in any territory since 1914?

A. No, I have not.

Q. And in so far as your testimony relates to long-train operation on the Southern Pacific, it is purely speculative and not based upon your experience at all, is it?

A. It is based on my experience in handling trains of 70 cars and having knowledge by experience of slack action on trains of 70, but I have a good opinion what it would be on 80 or 120, because I have been on trains of more than 100 cars where I have had that slack action. There is no difference then than there is today.

Q. Well, you don't know that of your own experience, do you?

A. Yes, that is a matter of experience.

Q. You don't know of your own experience whether the freight car equipment and the locomotives are any different today than they were in 1912?

A. Oh, yes, they are lots different today.

Q. The freight cars are built considerably different, aren't they?

A. Correct.

Q. And the locomotives are much larger?

[fol. 4391] A. With one exception. The locomotives, at the time I was employed with the Santa Fe, were of a Mallet type engine.

Q. Do you know whether or not the locomotives of today have a great deal larger air reservoir capacity?

A. They do.

Q. And there are different types of triple valves on the freight cars?

A. Yes, sir.

Q. Than there were in 1912?

A. Correct.

Q. They have been vastly improved, haven't they?

A. I would say yes, I couldn't deny that fact.

Q. Do you know anything about the appliance on the freight car called a draft gear?

A. Does that mean that is in operation with the air brake?

Q. No, I don't mean that. Do you know what the draft gear is?

A. That is the gear that holds the brake beams and the drawbars.

Q. Well, do you know what it is?

A. It is the drawbars, that is the draft gear.

Q. So far as you are concerned, the drawbar and the draft gear are the same thing, are they?

[fol. 4392] A. The draft gear is the drawbar, yes.

Q. Do you know what the draft gear consists of, Mr. Durnil?

A. Well, on these new type, they consist of springs in the draft gear that regulates the slack in that draft gear in these new type cars; some of the older first ones came out with springs and a cross-arm in between, to hold the draft gear in. They are now changing those to the spring type.

Q. Now, the only feature of the draft gear with which you are acquainted are the springs, is that correct?

A. Well, and by observation, that is all, I can't tear them down and break them up.

Q. You have never examined the draft gear?

Mr. Strauss: I don't think this is proper cross-examination, your Honor. I didn't examine the witness as to the draft gear and its construction.

The Court: The objection is overruled.

A. The only knowledge I have of the draft gears is by observation. I have never had occasion to make a thorough investigation as to the construction of the draft gear, and what it is made of, because the manufacturer does that, I [fol. 4393] don't.

Mr. Mason: Then you don't know of your own observation of the draft gears, how the motion in the draft gear is controlled?

A. By springs, I think.

Q. And only by springs?

A. The springs, which have the regulation of the slack in that particular draft gear.

Q. Now, is there any other place besides the draft gear, Mr. Durnil, any place on the car where slack is developed, or where slack exists?

A. Well, there is a little slack between the knuckles from one car to the other, about enough that you can get your finger between.

Q. Amounts to about seven-eighths of an inch, doesn't it?

A. I judge that would be a good figure.

Q. And that is entirely free slack?

A. That is right.

Q. And the motion in the draft gear throughout is controlled by the spring?

A. Well, I wouldn't be positive about that, but that is my opinion about it.

Q. And that is cushioned by the springs, is it?

A. You can call it cushioned if you want to, I don't use that word.

[fol. 4394] Q. But it is, according to your understanding and view, developed against the resistance of the springs, is it?

A. Well, it is my understanding in those, that there has to be a certain amount of slack in each car, so the engineer can take this in order to start the train on these heavy grades; the slack, when he goes back it shoves it in, and when he pulls it out it comes out. Now, as to all the material that is in all these late model cars, I couldn't tell you, because I have had no break-in-tows with those cars. They are regulated in there, some by crossbars and some by springs that holds the draft rigging into the sill of the car to prevent them from pulling out.

[fol. 4395] Mr. Mason: Now, Mr. Durnil, when the slack is stretched out does that pull the springs out in the draft gear?

A. That pulls the drawbar out, pulls it clear out as far as it will go.

Q. Does that extend the springs in the draft gear?

A. I don't know, I never got under there to look but evidently the springs are there for a purpose.

Q. The resistance is developed against the resistance of those springs?

A. I would say so.

Q. Is it the same way when they are pushed in?

A. I imagine they are there to regulate this slack.

Q. You have never heard of a frictional draft gear, have you?

A. I have heard of it, but I couldn't describe it.

Q. You don't know anything about the use of friction members in a draft gear to control the motion?

A. I will have to tell you I am not competent to testify as to the construction of those cars, not competent.

[fol. 4396] Q. You spoke of a slack of five to seven inches per car. Does that include the draft gear motion and the free motion at the coupler face?

A. What I meant by that was that amount of slack in the drawbar at each end of the car.

Q. You said it was from five to seven inches per car?

A. That is right, and there are two drawbars in the car.

Q. Does that include the seven-eighths of an inch at the coupler face?

A. No, I don't include that.

Q. When did you make a measurement to enable you to state that there is that much slack in each car?

A. I didn't make any measurement. I will have to say this regarding that, the late equipment that has been purchased the last year or two, there isn't quite as much slack as there used to be in the old constructed cars, they varied to a great extent. The new type cars now that we are getting from the manufacturer, I believe the slack, or at least it appears to me, is more quickly regulated than in the old type car.

Q. You have never made any measurements?

A. No, not lately. I measured one car years ago and [fol. 4397] found seven inches in it.

Q. One car?

A. That is right.

Q. How long ago was that?

A. About seven years ago.

Q. You told us at considerable length of the duties of a brakeman, Mr. Durnil. Do the brakemen on a freight train have any duties to perform when a meet is made with another train?

A. Yes, sir.

Q. You didn't mention that. Will you describe what those duties are?

A. Their first duty is to be sure and call it to the attention of the engineer and conductor that those trains are going to meet so they won't overlook them, and the duty of the head brakeman, when they take the siding, is to open the main line switch and the derail and the rear brakeman lines them back and after the train stops they then inspect their train.

Q. When the head brakeman opens the switch, does he run ahead of the engine?

A. Sometimes he runs ahead; sometimes the train is brought to a stop, it all depends on the location, the grade condition; the tonnage, and several other factors enter into that.

[fol. 4398] Q. He has to detrain and go ahead of the train to open the switch, does he?

A. On a heavy train most of the head brakemen would run and get those switches without stopping the train. If it is going downhill, the engineer stops.

Q. Does the head brakeman have to get on the train while it is in motion after the train starts up to enter the switch?

A. Yes, sir.

Q. When the train has completely entered the siding, what happens then to the switch?

A. The rear man throws the switch back to the main line and also the derail.

Q. Does he detrain from the train while it is in motion opposite the switch?

A. From the rear end of the caboose, yes, sir.

Q. When the train leaves the siding after the meet has been made, who gets the switch?

A. The head brakeman lines the derail and the switch of the train to go out and the other brakeman lets the train roll by and after it all gets out on the main line the flagman lines the derail and main line switch back in normal position and locks it.

[fol. 4399] Q. Does the train stop after it gets out on the main line?

A. Sometimes it does and sometimes it doesn't. It depends on the grade whether the engineer can hold the train or not.

Q. Isn't it usual for the rear brakeman to run after the train and catch it while it is in motion?

A. That is right, if he can.

Q. That happens every time a train takes sidings for a meet or pass, doesn't it?

A. That procedure is followed, yes, sir.

Q. If more trains are run, there are more meets, aren't there?

A. Well, I wouldn't say "Yes" to that.

Q. Have you any doubt of it?

A. Oh, yes, double track, for example, they move 50 trains and they don't bother you at all.

Q. Let's confine ourselves to the Tucson division with which you are familiar.

A. All, right.

Q. We have double track on the Tucson division in three localities, haven't we?

A. Yes, sir.

Q. And the balance is single track?

A. That is right.

Q. And the larger part of the main freight line is single [fol. 4400] track, isn't it?

A. Yes.

Q. From Lordsburg to Mescal, from Stockham to Well-ton, and from Dome to East Yard?

A. That is right.

Q. All about 55 miles, isn't it?

A. Yes, sir.

Q. And on that single track territory isn't it a fact that in your judgment the more trains that are run in both directions the more meets will be made?

A. When you are speaking of meets, I have met four and five trains at one stop. With good dispatching you may meet five or six trains with only ten or fifteen minutes delay with good train dispatching. Generally, our trains here are run in kind of blocks thirty minutes to an hour apart and sometimes much closer. The inferior train goes to a certain place for the first section. He may meet two or three more sections at that same siding and then he may proceed twenty miles and meet two or three more sections with the very minimum of delay if you have got good dispatching. However, if you have poor dispatching and are spread out and the trains are off their orders, they do require taking the siding and more delay.

[fol. 4401] Q. If you have a fleet of seven trains to meet and you can meet them three at a time as you suggested, you will have three stops to meet them?

A. That is correct.

Q. If you have a fleet of eleven trains to meet and you can meet them three at a time you will have that many more stops?

A. That is right. In all single train operations that is true, you can't get away from that, single track operations.

Q. And each time that you multiply the meets and passes you multiply the number of times that those men have to

get down on the ground to throw switches and climb the train while it is in motion after they have done it, don't you?

A. Yes, every time the train stops the brakeman has to get on the ground whether it is a meet or whatever it is.

Q. You spoke of having to rebrass cars. You have been a freight conductor for quite a while, haven't you?

A. Yes, sir.

Q. How many times in the course of a roundtrip to Lordsburg do you have to re-brass a car?

A. Only as a passenger conductor did I brass a car, a dining car twice between here and Lordsburg and set the car [fol. 4402] out at Lordsburg but on freights since I have been assigned over there I want you to understand I don't work very regularly. I haven't brassed a freight car since I have been assigned between Tucson and Lordsburg but I don't work regularly like the regularly assigned conductors do.

Q. Is that because of your duties as local chairman?

A. Yes, sir.

Q. By the way, you are local chairman of the local lodge of the Brotherhood of Railway Trainmen, aren't you?

A. Yes, sir.

Q. Referring again to meets and passes, suppose that between the end of the double track at Stockham and Picacho there is one train in each direction, there would only be one meet, wouldn't there?

A. That is right.

Q. Suppose there are two trains west and two east, how many meets?

A. You could only have one if they were close enough together. They were spread out, thirty or forty minutes apart, you would have two meets.

[fol. 4403] Q. You would have four, wouldn't you?

A. If you had two trains coming east and you were going west?

Q. I said two trains in each direction.

A. That depends on the dispatcher and the right he gives you. He may give you the main line and you could ride along and there also may be some first-class trains involved that you have to get out of the way of and you stay right there and the second-class trains may have the right of way over you. It is pretty hard to answer those questions

specifically, Mr. Mason, because I am sure you should realize that in railroading there are so many things that can come into it that you don't think of.

Q. You are going on to volunteer a long answer here, but I don't care whether you have freight or passenger trains. If you have two trains in each direction, each will have to meet the other two, won't it?

A. That is correct.

Q. You will have four meets, won't you?

A. What do you mean by four meets?

Q. Each train will meet two others and you have two trains in each direction.

A. Generally in one direction the trains will have the [fol. 4404] right and sometimes they don't know anything about you, they will keep going right on about their business. You may be in a sidetrack for them but they have no orders on you at all.

Q. Isn't a meet when a train goes by another going in the opposite direction?

A. That is right, you meet one and you may be at that same sidetrack and meet the other, those two meets you have at the same sidetrack. Again you may meet one at this sidetrack and on the orders you have give you time to go to the third sidetrack which would cause your train to take siding twice. That would be two meets. Is that what you mean?

Q. You either have the choice of waiting at a siding while two successive trains come by, in which case you enter the siding only once or you meet your two successive trains at two successive sidings if they were spaced sufficiently apart?

A. That is right.

Q. And you have less delay at either siding?

A. If they are on orders, yes.

Q. But in either case you have made two meets?

A. That is right.

Q. So if you have two trains in opposite directions you are bound to have four meets, aren't you, because the second [fol. 4405] westward train will meet the two eastward trains and the same way that the first westward train will meet the two eastward trains?

A. Well, in train dispatching the dispatcher gives the two eastward trains probably right over the two westward trains and he waits for them. You have to meet two trains east,

you take the siding for the first train and if you have sufficient time on your orders to go to the next siding you go down and take siding. That is the two times that you take siding to meet two trains. There may be another fellow behind you and he will do the same thing in addition, what I mean he would take two, that would make four. Is that what you are getting at?

Q. That is the fact, isn't it?

A. You didn't put it that way.

Q. All right, as long as you make it clear, it is all right with me. You spoke of the difficulty of observation of the train while moving by brakemen sitting in the caboose?

A. In the cupola.

Mr. Strouss: Pardon me, Mr. Mason, if you are going to spend any length of time on that I would prefer to recess as I have an appointment.

The Court: Very well, the court will be at recess until ten o'clock tomorrow morning.

[fol. 4406] 10 A. M., April 11, 1941.

All parties being present as heretofore noted, proceedings were resumed as follows:

The Court: You may proceed. You are going to complete your cross-examination of this witness, Mr. Mason, at this time?

Mr. Mason: I think so, your Honor. There is some material I wanted to use in connection with his cross-examination that may not be available until this afternoon, but I think I will finish with the questions that I have before the morning recess. I would like to have the privilege of recalling him after the noon recess if necessary.

The Court: The Court will grant you that privilege. You may proceed.

E. J. DURNIL resumed the witness stand.

Mr. Mason:

Q. Mr. Durnil, you and I had some discussion yesterday of the possibility of your having handled a train of more than 70 cars from Lordsburg to Tucson on April 29, 1940.

You were then positive that you had not been conductor of such train. I am going to show you form S-1310 which is a switch list and I am also showing the document to opposing [fol. 4407] counsel, a switch list of a train entitled, "extra west, engine 3705, leaving Lordsburg 7:35 A. M., April 29, 1940, arriving Tucson 4:40 P. M. of that day," the switch list being on the face and the reverse of the form and I will ask you to look at it and see if that is not your signature and your handwriting at the top?

A. Yes, that is my switch list and that is my signature. After my testimony yesterday that I didn't think I handled one, I thought that over again last night and it seems as though I did remember of handling a train of slightly over 70 cars either from Bowie to Tucson and if I had my train book I could definitely determine whether I did it from Lordsburg to Tucson or from Bowie to Tucson.

Q. I didn't suggest in my question yesterday that you handled them all the way from Lordsburg to Tucson. My question yesterday suggested that you had handled a train of more than 70 cars on April 29, 1940, and that is all I said. This shows 73 cars into Tucson, does it not?

A. That is correct, but I think those were handled between Bowie and Tucson. My train book would reflect that evidence if I had it but I didn't have it.

Q. You spoke yesterday in your testimony of passing [fol. 4408] signals back and forth between the head end and rear of the train. In practice do you find that you are able to pass signals readily between the front and rear of trains of 70 cars?

A. Yes, a great deal of that relies particularly on the alertness of the head brakeman to always be watching towards the rear of the train for any signal that may be given from the rear of the train.

Q. That is part of the head brakeman's duties, isn't it?

A. That is right.

Q. You had no difficulty in passing signals between the head brakeman and the caboose on trains of 70 cars?

A. No, if the train is straight, and generally by getting on top, in daytime with your hat or by night lighting red fusees you can generally pass the signals to the engineman.

Q. As a matter of fact, Mr. Durnil, in Arizona particularly the air is generally pretty clear, isn't it?

A. With the exception in the summertime, as I have previously testified, in the daytime in the extra heat it is diffi-

cult to see and distinguish signals accurately because of the heat waves.

[fol. 4409] Q. You don't have any obstruction to vision on account of fog, do you?

A. Occasionally in the winter months we do have considerable fog in Arizona, particularly this winter.

Q. That is the first time I ever heard that confessed by an Arizonan.

A. I regret to have to confess it, nevertheless it is true.

Q. You rarely have any serious or long continued obstruction to vision on account of rain storms, do you?

A. Yes, occasionally we do have rain storms in our summer months and also this winter we have had an excessive amount of rain.

Q. How many times in the course of the last year have you had any obstruction to vision while you were operating and attempting to pass signals from front to rear or otherwise to observe the train on account of rain or fog?

A. I will have to confess that myself particularly I haven't had any this winter because, as I have previously stated, I haven't worked very regularly but I have had other trainmen inform me of the extreme heavy fog and rain at various points this winter.

[fol. 4410] Q. Your answer as to interference is entirely based on hearsay from others?

A. And my knowledge of the weather.

Q. You have no interference as to vision on account of snow storms or blizzards, do you?

A. Occasionally in the Lordsburg district we do have snow storms, but not in Arizona.

Q. You have no serious obstructions to vision, generally speaking, along the line on account of heavy vegetation overhanging the track?

A. Not very often, no, sir.

Q. You have none on account of heavy smoke hanging in the air from manufacturing districts, do you?

A. No, sir.

Q. None on account of buildings over the larger part of the route, do you?

A. No, with very few exceptions, maybe at Tucson.

Q. You stated that before you start out you and your brakemen or you, if you are working as a brakeman, when

you make your standing inspection of your train try to find any cars where the air is not working, is that correct?

A. You are now referring to a terminal train inspection? [fol. 4411] Q. The initial terminal inspection.

A. That is correct, that is one of the features, yes.

Q. In practice you rarely find any cars where the air is not working, isn't that so?

A. No, we occasionally do.

Q. When did you find the last one?

A. I wish to add to that this, at the terminals where carmen are not maintained the connecting conductor may advise the other conductor outbound of a certain car in the train cut out for some particular reason. Likewise, there may be a car in that train that the air is not working on.

Q. You say there may be?

A. It has happened.

Q. When did it last happen with you?

A. I didn't come in with any specific cases, Mr. Mason.

Q. You have no record or memory of any specific case where that has happened with you?

A. I presume if I had access to the records of my own reports and other conductors' reports that I connected with that that fact could be developed.

Q. You have known about this case for a long while, haven't you, Mr. Durnil?

A. Yes.

[fol. 4412] Q. You have known you were going to be a witness for at least seven weeks, haven't you?

A. No, I didn't, no, sir.

Q. You have had ample opportunity to prepare, haven't you?

A. Conductors or brakemen, you are speaking now of brakemen, brakemen do not maintain such records.

Q. I am speaking of any instance that you know of that will illustrate and support your testimony that you gave here yesterday. As local chairman of the B. R. T. you have had quite an active interest in this case, haven't you?

A. Oh, yes.

Q. You still haven't prepared yourself with any specific instance to support that part of your testimony?

A. That is a matter of record with the carrier and if those records were brought in I could verify my own records because it is a case where the instructions are placed

to brakemen and conductors by bulletin of those questions and we are cautioned to live up to them or required to live up to them and we do it and we find those cars every once in a while. Furthermore, going into Lordsburg we are supposed to wire the terminal there of such cars in advance [fol. 4413] if we possibly can so that the car repair men there, not inspectors, but car repair men maintained there can be called and brought on duty to repair that car at that terminal so the car can continue on. I want to add further it is a matter of record with the carrier and our train books and our records are filed with the carrier and as an employee I do not keep those records.

Q. As a matter of practice, these cars where the air is not working are repaired at Lordsburg before you get them from the other division and you turn them over to the other division and they are repaired at Lordsburg before they proceed?

A. They are supposed to be and if not our instructions are to switch them back directly ahead of the caboose. However, at Gila Bend that is not true, they are not repaired at Gila Bend.

Q. You cannot recall for me, can you, any instance where you have found such a defective car at Gila?

A. No, I would have to answer that as I previously did. I don't maintain that record except in my train book which I do not have available and they are not retained in my possession.

Q. Going to your testimony as to picking up cars and re-[fol. 4414] leasing hand brakes when they are picked up. That is a duty associated with the individual cars picked up, isn't it?

A. Yes, sir.

Q. It has nothing to do with the length of the train in which the car is to be placed?

A. Yes.

Q. How?

A. Assuming that I started at a station with 65 cars and I was instructed to pick up five more cars at that particular station that would increase my train to 70 cars.

Q. A job that you do on the five cars has nothing to do with the fact that you have 65 cars, has it?

A. Yes, it requires in picking up those five cars that we ascertain if the air is properly working in those five cars

when we pick them up and also that the journal waste is not taken out of those cars which is liable to burn off the journal.

Q. Isn't that a duty that relates itself to those individual cars?

A. That is true, that is our duty.

Q. You speak again of the possibility of a flat wheel on a [fol. 4415] car which may lead I take it to a derailment?

A. Yes, a flat spot on a wheel that is condemnable must not be handled in the train. It should be set out.

Q. If it is so handled, it may lead to a derailment?

A. It has possibilities of breaking rails particularly in the winter time.

Q. A broken flange on a wheel is likewise likely to lead to derailment?

A. Correct.

Q. If a hot journal box is not detected, you may have a journal burned off, may you not?

A. That is true.

Q. Which will also lead to derailment?

A. Correct.

Q. Those are all defects in or failure of the freight car equipment itself, aren't they?

A. Yes, and I might add there that broken arch bars also can lead to derailment.

Q. You don't have any arch bars anymore, do you?

A. Yes, we occasionally have broken arch bars.

Q. How long since you have had a bar in one of your trains equipped with an arch bar truck other than possibly work equipment?

[fol. 4416] A. I was a conductor on a train at the time I was assigned between Yuma and Gila in the year 1924 or 1925 in which I had a broken arch bar on a car of Southern Pacific oil at Theba station.

Q. 1924 or 1925?

A. Yes, sir, at Theba station.

Q. That is the last broken arch bar that you can remember?

A. That I can remember, yes, sir.

[fol. 4417] Q. Now, each of these defects or failures, whether it be a flat wheel or a journal failure, or a flange, broken flange, is a defect of the individual car, isn't it?

A. That is right.

Q. And it is a defect which may happen in a train of 40 cars?

A. Yes; for example, referring to a broken arch-bar, the car may be slightly overloaded.

Q. But it is a defect of the individual car?

A. That is right.

Q. And it may occur in a train of 70 cars?

A. Yes, or a hundred or a hundred and fifty.

Q. Or a hundred; or a hundred and fifty?

A. That is right.

Q. But if you have, let us say, a thousand cars to move, whether you move them in 50-car trains or in 70-car trains, you will expect about the same number of defects in the movement of that thousand cars, won't you?

A. Well, yes, we are trained to always expect to find defects, that is why we inspect the trains at every opportunity. There is no way of man knowing when steel or iron is going to break.

Q. These defects then, if you have a thousand cars at Lordsburg to move to Tucson, may occur no matter what [fol. 4418] the length of the train in which they are moved, whether they are 50 or 70 cars or anything in between?

A. No, you never know when a defect is going to develop.

Q. Now, do you contend that those defects result in hazard to the trainmen?

A. Most certainly so.

Q. Now, suppose that you handle those thousand cars all in 50-car trains, you will have twenty trains, won't you?

A. Yes, sir.

Q. You will have four trainmen, including the conductor?

A. Yes, sir.

Q. On each one of those 50-car trains?

A. Yes, sir.

Q. Or 80 men exposed to whatever hazard there may be from these defects; is that so?

A. Well, if we to the best of our ability observe the rules and observe our trains, it is easier on 50-car trains as you stated, to properly observe and police that train, much easier than if it were 70, or a hundred car-train.

Q. Still, Mr. Durnil, if you have twenty trains to move these thousand cars subject to these defects, you will have [fol. 4419] 80 men exposed to hazard, not including the engineer and fireman?

A. That is true.

Q. If you have all of that thousand cars and you move that all in 100-car trains, you will have ten trains?

A. Yes, sir.

Q. And 40 men exposed to the hazards?

A. Yes, but there is a great difference there in ten cars and twenty.

Q. We will get to that later. You referred to the rules governing the duties of a conductor and likewise to rules 827 and 828, which relate to the duties of the brakemen in making inspections; you read those rules out of the Rules and Regulations of the Transportation Department for the System, didn't you?

A. Yes, sir.

Q. I take it that those rules apply in New Mexico as well as in Arizona?

A. Yes, sir.

Q. California?

A. Yes, sir.

Q. Nevada?

A. Yes, sir.

Q. And if those rules are lived up to, why, the inspections will be just as carefully made in New Mexico as they are in Arizona?

A. That is right.

Q. Or anywhere on the System, is that correct?

A. That is right, an inspection is an inspection, as permitted in our time-table instructions previously testified, the distance a train can travel before it has to be inspected, in other words, 65 on the Tucson division and 60 on the Rio Grande.

Q. Now, I think you said that these inspections covered by Rules 827 and 828 were necessary in order to find possible defects before they became serious and led to derailments?

A. That is correct.

Q. They are primarily for the purpose of discovering these defects in or failure of the freight car equipment itself which may lead to these derailments; is that correct?

A. That is correct.

Q. And I think you said also that the inspection was more difficult on a train of a hundred cars than it was on a train of seventy cars?

A. It takes longer to make the inspection, yes, sir.

Q. But it is no more difficult?

[fol. 4421] A. There are 30 more cars in that train to inspect than in the 70.

Q. Otherwise, it is no more difficult to make it?

A. For standing inspection it is not, except the time factor involved, but for running observation it is much more difficult.

Q. It is more difficult, is it, to roll a train of 100 cars by at eight miles an hour and make the inspection than it is to roll the 70-car train by at eight miles an hour and make the inspection?

A. No, I wouldn't say that there would be any difference in letting a 100-car train roll by than a 70-car train, so far as the rolling inspection is concerned, except there are other factors to take into consideration, and that is the particular territory or the grade you are standing on that the rolling inspection has to be made. We have localities between Tucson and Lordsburg that the engineer would be unable to maintain the speed of eight miles per hour, assuming we had a hundred-car train of ten, twelve or fifteen thousand M's in the train.

Q. I am going to question you on that. How do you know that the engineer is unable to maintain that speed? You [fol. 4422] have never worked on a train of a hundred cars in Arizona?

A. I know from my knowledge of railroading, of the trains we handled of 70 loads, in certain localities the engineer is unable to maintain a speed of eight miles per hour for rolling inspection at certain places because of the grade.

Q. What are those places?

A. Benson or Steins would be one eastward, where the engineer would be impossible to maintain his speed of eight miles for rolling inspection, just east of Steins where we cut out the helpers.

Q. Any other place?

A. Also westward out of Steins, where we may be in the side-track and have the switches to line back, it would be necessary there after the rolling inspection was made to stop the train because the engineer is unable to maintain that with his independent engine brake, and at Mescal going eastward.

Q. Mescal going eastward?

A. Yes, sir, a tonnage train of 70 loads, 65, between 65—6,500 or 7000 M's.

Q. Well, your statement is based entirely upon your observation of trains of 70 cars and less and not upon any [fol. 4423] observation of trains of greater length operating in this territory or anywhere else?

A. Well, I wouldn't say anywhere else, if you leave that off, but I would say in Arizona, my experience the last 27 years in Arizona.

Q. You have never had any experience with trains of more than 70 cars handled by the present type of locomotive owned by the Southern Pacific Company other than the one 73-train that you handled?

A. Not on the Southern Pacific, but I have on the Santa Fe.

Q. You haven't had any experience with the present type of Southern Pacific locomotives on the Santa Fe?

A. My experience on the Santa Fe was a Mallet type engine, which is equivalent to our 5000-class or 4100-class engines here now.

Q. You say the Mallet type on the Santa Fe in 1913 or 1914—

A. 1911.

Q. —30 years ago, was the equivalent of the AC-6 and AC-8 locomotive on the Southern Pacific today?

A. No, I wouldn't say definitely that is a fact.

[fol. 4424] Q. Have you ever been in engine service?

A. No, sir.

Q. You don't know much about engines, do you?

A. I have ridden them a lot as head brakeman, but I am not qualified to testify to an engine.

Q. Do you know the wheel arrangement of the Mallet type you speak of?

A. They were two engines put together.

Q. Do you know the wheel arrangement of the AC locomotive?

A. They had 16 drivers, if I remember correctly.

Q. On what?

A. On the Mallet type on the Santa Fe, they were 1100-class engines.

Q. Do you know what their tractive effort was?

A. No.

Q. Do you know what type airbrake they carry?

A. They had the Westinghouse airbrake.

Q. It wasn't the 8-ET type, was it?

A. Well, of course, I cannot specifically state, but they

had the double pump with the Westinghouse airbrake on those Santa Fe Mallets.

Q. Your last experience was 30 years ago on the Santa Fe?

A. That is right, and we handled several trains of over [fol. 4425] 100 cars in that particular part of the railroad on a grade of one and one-half per cent.

Q. Mr. Durnil, when a train is moving and it is necessary to pass a signal or make a signal at the caboose which has to be seen and acted on at the engine, what signal, if any, is necessary?

A. Well, I think, as previously stated, if the train is moving by day —

Q. Just a minute. Do you have to give a proceed signal?

A. It is the duty of the conductor when the train is standing to give the proceed signal.

Q. I am asking you when a train is moving and you make a signal from the caboose, do you make a proceed signal?

A. Not necessary under the Southern Pacific rules to give a proceed signal while the train is in proceed motion.

Q. It is a fact, isn't it, Mr. Durnil, that the only signal you have to give from the caboose to the engineer when the train is moving under any circumstances is a stop signal?

A. No, I wouldn't agree to that.

Q. What other signal do you have to give?

A. Sometimes it is necessary at side-tracks where we [fol. 4426] have to back out, back up signals are given.

Q. Do you give back-up signals when the train is moving forward? When the train is moving, what signal other than the stop signal do you have to give the engineer?

A. We give back-up signal and the continuously back-up signal; we are also under a certain rule here while a train is running it parts, it is the duty of the trainmen to take action to stop the detached portion of the train and give break-in-two signals, and particularly where you are operating on double-track at night time, you also have to protect trains from the opposing direction because you may have obstructed the other track.

Q. Is that a signal you give to the engineer?

A. That is right; that is a signal you give to the engineer.

Q. To protect the train on the other track?

A. Yes, sir.

Q. That is in case of a break-in-two, is it?

A. That is right; the train is in motion, you asked about signals, the train is in motion, it is the duty of the engineer to know on double-track of that fact and have the head brakeman with red light protect the trains in the opposite [fol. 4427] direction until we positively know that the opposing track is in no way foul that this train may collide with, that is the duty of the conductor and the engineer and it is the duty of the brakeman to be on top and give those break-in-two signals where it can possibly be done.

Q. Now, what rule are you referring to?

A. Well, I will find it in a minute. One of the rules that would apply in the protection of trains in the opposite direction would be Rule 99.

The Court: Well, that protection, Mr. Durnil, would come after the train had stopped, would it not?

A. That is right, after the train parted while in motion, then came to a stop.

Q. Well, possibly you didn't understand Mr. Mason. If I understood him correctly, he was asking you what signal or signals you would give to the engineer when your train was in motion proceeding forward, other than the stop signal?

Mr. Mason: And I said also from the caboose, Mr. Durnil.

A. That is correct. Well, this would be from the caboose or the rear portion of the train.

Q. Will you find the rule which covers it?

A. Well, it is in here if I can find it regarding the train [fol. 4428] men stopping the detached portion first.

Q. Well, I don't think you will find it, Mr. Durnil, in the book.

A. Yes, sir, it is in here.

Q. I suggest that you take the time during the morning recess, and I will proceed to some other questions.

A. All right.

Q. Mr. Durnil, you were present in the courtroom when Mr. Cooper testified, were you not?

A. No, sir, not all of his testimony, no, sir, I wasn't; part of the time I was here.

Q. Irrespective of that, if a break-in-two occurs, Mr. Durnil, in your experience, doesn't that result in setting the brakes on both portions of the train?

A. No, the forward part of the train, in point of the break-in-two, would be stopped by the air and, assuming that the rear part of it, the air wasn't so good, would cause it to go further than the front portion, it would be the duty of the trainman to set hand-brakes to stop that rear portion before it collided with the front portion of the train.

Q. Do I understand then that if the train line breaks, [fol. 4429] the brakes wouldn't be set on the rear portion?

A. They might be set but they might not be quite so prone to stop so quick as the forward portion, which would cause it to collide with the front part of the train.

Q. Now, Mr. Durm, have you ever had a case of a break-in-two where you were a member of the crew, either conductor or brakeman, where the rear portion of the train failed to stop as a result of the setting of the air, because of the break-in-two?

A. No, Mr. Mason, but I would like to quote your Rule 102 now, which has a bearing upon that question, on page 51. "If a train should part while in motion, trainmen must take necessary precautions to prevent damage to the detached portion. Should there be a sudden application of the brakes which may cause damage to the train or obstruct the adjacent track, train parting signal 14 F must be given, and engine and trainmen must immediately display stop signals to trains on other tracks. Trains receiving these signals must stop and not proceed until it is known that the track is not obstructed." That is what I referred to before, and I would quote that rule as being an answer to your question.

[fol. 4430] Q. That says, "which may cause damage to the train or obstruct the adjacent track."

A. Damage to train would mean our train, and the adjacent track would be on double-track. The trains may be operating in the opposite direction on the other track.

Q. Let us look at 14 F a moment.

A. That is a whistle signal.

Q. And not a hand signal from the rear. The rule speaks of a whistle signal and I asked you about hand signals. Is that what you mean when you say signals must be given from the rear, you refer to whistle signals?

A. The whistle signal is when the engineer gives three blasts of the whistle, indicates a break-in-two, the engineer is positive that his train is broke in two; however, the conductor could apply the air in emergency from the caboose.

taking it away from the engineer gradually, and the engineer wouldn't know whether his train was broke in two or not. It has been the practice of trainmen while being on top to give a vertical signal with the lantern in a round position that the train had parted. That was particularly followed for many years when trains were handled where they [fol. 4431] were not all air in the trains; it is still a practical practice we would use in road and yard among ourselves to notify the others that the train had parted.

[fol. 4432] Mr. Mason:

Q. Now, Mr. Durnil, there is no provision in rule 102 or anywhere else in the book, is there, for the giving of a train parted signal by hand from the rear?

A. No, not now. There used to be.

Q. The reference you gave me was to a whistle signal given audibly from the engine, wasn't it?

A. 14-F calls for the engineer to blow three blasts of the whistle to indicate the train had parted.

Q. If the train is in motion then the stop signal is a signal principally that you have to give from the caboose which must be understood by the engineer?

A. By day or by night with a red fusee.

Q. That is a stop signal, isn't it?

A. A red fusee is our understanding that they want to stop and we stop. However, that is not covered in the rules.

Q. Just a moment. Suppose that the stop signal is not seen by the engineer, do you then have any step that you can take to bring the train to a stop?

A. Yes, the conductor will use the conductor's emergency valve.

Q. That applies the brakes throughout the train, does [fol. 4433] it?

A. Yes, sir.

Q. Starting at the caboose?

A. Starting at the caboose first.

Q. And proceeding forward through the train?

A. That is right. There are two ways to handle that from the caboose.

Q. I don't want any volunteer answer here, Mr. Durnil. If the emergency application of the air by the emergency valve starts at the caboose and proceeds forward through the train serially with the last car and the next to the last

car and so on, there cannot be any run-in of slack from the rear as if the emergency were made in the head portion of the train, can there?

A. The run-in would be on the head end, not on the rear in that case.

Q. So there would be no danger of slack injury to the men in the caboose, would there?

A. No, but there would be danger to the head brakeman on the head end of the train.

Q. On account of the application of the brakes at the rear end?

A. Yes. As a conductor I may slam those brakes on with full force to stop the train as fast as possible. In that case [fol. 4434] there would be a most severe jerk to the head end of the train.

Q. Have you any record of any slack action injury to the head brakeman or any other member of the crew on the engine of the train where application was made of the air in emergency by the conductor on either a long or short train?

A. I have no records, Mr. Mason, to produce.

Q. Has anything of that kind ever happened on a train where you were conductor?

A. No, not directly under my charge, no.

Q. I have a record of several cases, one or two cases, where you applied air in emergency from the emergency valve. As a matter of fact, has any casualty occurred in any instance where you as conductor applied the air in emergency?

A. I will answer that this way, that I don't maintain a personal record for my review and should I, they are a matter of record with the carrier that I cannot recall at this time.

Q. If there were serious casualties involved because of slack action due to application of the air in emergency at the conductor's valve, you would remember that, wouldn't you?

A. If it was real serious I would.

Q. You remember back thirty years, all the way from 1911, all of your experience on the Santa Fe, you would [fol. 4435] remember these intermediate affairs if they were serious?

A. I know I have never caused a trainman to be killed by my handling of the air from the rear but I can't recall

whether there was any slight personal injury or not to some trainman because of my action in handling the air.

Q. In any event, you cannot recall any reportable injury, can you?

A. No, I cannot because I haven't the records.

Q. If the train is stopped there are occasions when you have to give signals to the engineer at the head end?

A. Yes.

Q. When the train is stopped and still intact, not broken up or separated for purposes of switching. One of those signals is a proceed signal, isn't it?

A. Correct.

Q. Another signal may be a back-up signal?

A. Correct.

Q. Which is in the nature of a proceed signal except it involves a reverse movement?

A. Correct.

Q. Suppose the engineer does not see your proceed signal [fol. 4436] or your back-up signal because of the length of the train let us say, does that involve any hazard?

A. Under that circumstance I would try to space my brakemen in a position—

Q. (Interrupting:) Just answer my question, please. Does it involve any hazard because the conductor fails to see a proceed or back-up signal?

A. I don't understand your question when you say the "conductor fails."

Q. I should have said the "engineer," just correct that. Do you understand the question?

A. Read the question, please.

(The question was read by the reporter as follows: "Suppose the engineer does not see your proceed signal or your back-up signal because of the length of the train let us say, does that involve any hazard?")

A. Not because he failed, no, that wouldn't.

Q. Nothing at all happens, does it?

A. No, not while the train is standing still, with this one exception, Mr. Mason, I want to make an exception and I think I have a right to make it.

Q. All right.

A. Under the circumstances of a train going into a station [fol. 4437] where a train is following and I as a conductor know I have to stop my train at that station and I

want to drop off my flag, the flag gets off, I want the engineer to pull a little further on down to afford proper protection for my train so that the flagman can get the train at the following stop. I give the engineer the signal to proceed on down a quarter of a mile so he then would stop and I may have ample protection to my train to prevent any rear-end collision.

Q. In circumstances of that kind you would simply be trying to cover up your own failure to see that rule 99 was observed?

A. No, sir.

Q. When you are on the track under circumstances where you are likely to be overtaken by a following train, it is the duty of the conductor and the rear flagman to drop off in time to prevent a rear-end collision and have a sufficient distance back?

A. It is the duty of the flagman and the conductor in case the train is making such speed that the flagman is unable to drop off to comply with rule 99, that we drop off fuses at frequent intervals to inform the engineer of the following train that we are immediately ahead of. Further, I tried [fol. 4438] to explain the condition may arise where it is necessary that I stop my train. I am going to have to stop my train but before I get it fully stopped I want to get my flagman off to afford proper protection and I want my train to go at least a quarter of a mile further to give the following train ample time to be stopped, particularly on heavy grades, descending and heavy grades. It is necessary that we do that to afford ample time for the following train to be able to stop because at stations under the block system they can close in on them and that is why these signals, it is important that these signals be given either to proceed or to stop or sometimes just to go ahead, not a highball but just a go-ahead signal, to move your train a little bit further.

Q. When was the last time that you had a rear-end collision because of failure to give adequate protection to the rear on account of the inability to get the engineer to pull ahead?

A. I never had any rear-end collision, Mr. Mason, thank God.

Q. You have always seen that your flagman or yourself observed rule 99, have you?

A. To the best of my ability, yes, sir.

Q. You have always been able to afford protection?
[fol. 4439] A. Yes, sir.

Q. Have you ever under any circumstance had to give this proceed signal to an engineer standing on the main line after you had stopped short of a station because you didn't have sufficient protection?

A. No, that never happened to me, but as a conductor I am supposed to have that knowledge and to function under those conditions.

Q. It has never happened to you. You only think it might happen?

A. I don't want it to happen, either, Mr. Mason.

Q. Yesterday you spoke of the use of retainers and the necessity of brakemen riding out where retainers are used. It is a fact, isn't it, that retainers are not used between Tucson and Lordsburg?

A. We don't use them anymore except—

Q. (Interrupting:) Do you ever have any riding out by trainmen?

A. No, sir.

Q. Rule 869 is not applied to any territory between Tucson and Lordsburg, is it?

A. No, sir, except if we want to make some particular move at some particular station that requires the trainmen [fol. 4440] to be properly distributed over the train to pass signals the conductor will instruct him to get up there and do that.

Q. As far as the observance of the rule because of steep grades, you just don't do it?

A. No, sir.

Q. You spoke of hazards in making inspections at night. I take it that the hazard is one of stumbling and falling along the right of way while undertaking to see the defects or possible defects in the cars?

A. That is true, that is one of them, yes, sir.

Q. Isn't that the only substantial hazard in making standing inspections at night?

A. Yes, that is about the only one. Under our instructions every stop is an inspection stop if it is only five minutes or ten minutes or whatever it is and it doesn't mean at a station, any place a train may be stopped it is our duty to inspect the train. The hazard in that inspection is one of proper footing to prevent injury to yourself or looking out for bridges that are not decked, at night time

you may walk into one if you are not watching where you are walking. In that connection, Mr. Mason, I refer you to the rule—

Q. (Interrupting:) Just a moment, you have told me what [fol. 4441] the hazard is. The hazard is one of failure—

A. (Interrupting:) Yes, but I would like to quote this rule.

Q. All right, what is the rule?

A. Page 5, rule M of the rules and regulations, it says, "Employees must exercise care to avoid injury to themselves or others. They must observe the condition of equipment and the tools which they use in performing their duties, and when found defective will put them in safe condition, if practicable, reporting defects to the proper authority.

"They must inform themselves as to the location of structures or obstructions where clearances are impaired.

"They must expect trains or cars to move or be moved at any time, on any track, in either direction.

"They must not stand on the track in front of an approaching engine or car for the purpose of boarding it." Now that rule, Mr. Mason, the first duty of an employee or trainman is the first wording of the general rule on page 3, it says, "Safety is of the first importance in the discharge of duty." In your question it would be the duty [fol. 4442] of this particular trainman or conductor inspecting his train to caution himself as to any injury to himself in the performance of his duty. That requires him looking directly ahead to see that nothing happens to him in the performance of this duty and that is what we try to do to the best of our ability.

Q. This hazard to the trainmen while making inspections as I understand you is the hazard of stumbling or falling or missing your footing at a undecked bridge?

A. That is correct.

Q. That is the only substantial hazard which he encounters while he is making the standing inspection at night?

A. That is right, generally.

Q. Do you contend that that hazard is any greater because the train consists of more than 70 cars?

A. Just to this extent, more than 70 cars, I don't know how many more you are assuming there.

Q. Does the hazard of stumbling or falling along the right of way increase with the length of the train?

A. You would have an additional amount of territory to cover which might, because of that additional territory, [fol. 4443] involve you in turning your ankle or stepping off the undecked bridge, where if the train was of shorter length you wouldn't have to walk that far.

Q. That is the extent of the hazard then?

A. Yes, and I want to say further, inspecting trains at some of our regular stops, water stops and other places where the footing is good I would testify that the hazard of inspecting the trains where the footing is good is very, very slight.

Q. That has no relation to the length of the train you are inspecting, does it?

A. If the footing is good and you have a good place to walk all the way.

The Court: We will take our morning recess at this time.

(Thereupon a short recess was taken after which proceedings were resumed as follows:)

Mr. Mason:

Q. I think you said that you had in the course of your career undertaken to observe the air gauge in the caboose on the various trains where you served?

A. Yes, that is part of the conductor's duty to keep a constant watch over the air gauge in the rear of the caboose.

Q. Did you observe the air gauge in the caboose on any [fol. 4444] trains of more than 70 cars?

A. As the record shows here, I only handled one train of 73 cars but I recall my experience while on the Santa Fe as a rear brakeman, it was then my duty to also watch the gauge on the rear of the caboose on trains of more than 70 cars.

Q. The last time that you observed the air gauge in a caboose on a long train other than the 73-car train that you referred to was thirty years ago on the Santa Fe, is that right?

A. That is right, of more than 70.

Q. Do I understand you to say from your observation the air brakes do not apply in handling trains down the grades in Arizona on the rear cars of the train?

A. I believe I testified in handling a train of 70 loads descending a grade that in braking the train down the hill

where the engineer had the use of his air, he would be setting the air the second time before the air fully released the first time on the rear end of the train.

Q. Then do I understand that you assert that the air brakes are not working effectively on the rear end of that train?

A. At various times it is necessary, we have to stop him and cut the air out of some of the cars that hang on and [fol. 4445] will not release and may cause overheating of the wheels. That is due to going down the grade and constant use of the air.

The Court: Mr. Durnil, do I understand from your testimony that if the air brakes were not properly working in a car, say in the center of the train, that that would interfere with the operation of the air brakes in the cars to the rear of that defective car?

A. No, that would only interfere with that one individual car, the brakes on that one individual car. It would not affect the brakes on the other cars unless this particular car went into emergency action. That, then, would affect all the brakes in the train.

Q. That is rather an uncommon occurrence?

A. No, I wouldn't call it uncommon, your Honor, it happens quite frequently that we are required to stop the train because of a certain brake, some location in the train not properly releasing.

Mr. Mason:

Q. Mr. Durnil, when is the latest instance when you were a member of a crew when an undesired emergency took place resulting in a reportable casualty?

A. I could not say definitely, Mr. Mason, as to the particular instance or the date other than what I testified in my own individual case.

Q. If there had been an undesired emergency resulting in a sufficiently serious casualty to a member of your crew to result in more than three days' disability, you would remember it, wouldn't you?

A. I couldn't say I would, Mr. Mason, for a minor personal injury of three days or four. In twenty-seven years it would be pretty hard to make that definite statement without some record.

Q. Do you assert that on your 70-car trains which you were handling then that the brakes are not applying satisfactorily on the rear cars?

A. No, I didn't make that statement, not applying satisfactorily. I stated that occasionally descending these grades where the engineer is constantly using the air that we very frequently have to stop the train and cut the air out of some particular car. For example, here a few days ago I stopped my train at Fenner, Arizona, descending from Dragoon to Benson because the fire was flying on one particular car and I got a fusee signal to the engineer and stopped the train and went up myself and inspected this train to ascertain if there wasn't something wrong with [fol. 4447] that particular car.

Q. Do you assert that the air brakes would not function properly on the rear ends of trains of more than 70 cars in this same territory?

A. My answer to that, Mr. Mason, would be the more cars and the more tonnage you accumulate in the train is just an additional effort on the part of the engineer to properly brake the train down grade. There is no instruction by the carrier nor the manufacturer as I understand it to tell us when the triple valve may become defective. That is part of our job, to keep a constant watch for these defects and catch them and correct them before any accidents occur.

Q. Have you in your experience, Mr. Durnil, had any derailments of trains where you were conductor or brakeman due to a flat wheel?

A. No, I can't recall that I have.

Q. When was the last derailment in which you were a member of the crew which took place because of a broken flange on a wheel?

A. I was the conductor of a train westbound, Lordsburg to Tucson, either in the year 1928 or 1929 where we had a broken flange and our train was derailed in the cut about a mile and a half west of Benson, Arizona—just [fol. 4448] a minute, I will have to correct that date, I believe that was in the war days of 1918, somewhere along in there probably.

Q. You haven't had anything of that character in the last twenty years, approximately?

A. No, sir, I have not.

Q. Are you familiar with the change in the construction and type of the wheels on freight cars which has taken place particularly since 1925?

A. The changes in them?

Q. Yes.

A. Particularly I noticed that many of these cars, the new equipment coming out, has steel wheels instead of cast-iron wheels.

Q. You are familiar also with the fact that the single plate wheel has largely replaced the double plate wheel that used to be in use?

A. No, I didn't know that. I have made no study of the construction of the new cars to qualify me to testify as to the manufacturers' changes in them.

Q. You don't contend, do you, that the crew consisting of the conductor and three brakemen which you have in Arizona is unable to make an adequate standing or rolling [fol. 4449] inspection of a train of more than 70 cars, do you?

A. Read that back again, please.

(The question was read by the reporter.)

A. There would be several factors involved in making a proper standing and rolling inspection of a train of more than 70 cars. First, it would require a little longer time; second, if my train was off of the main track where my flagman could assist by taking one side and the brakeman the other side, also when the train has been inspected and we start then to make our rolling inspection it would take longer for the train to pull by you and after the train pulled by and we all boarded the caboose we would then have to give a proceed signal to the engineer that the members of of the crew were all on and the train was ready to proceed.

Q. Do the rules require you to give a proceed signal after a rolling inspection?

A. There is no rule in the book that requires it, but it is necessary that the engineer know that we are on the caboose and if he doesn't he should stop until he gets that signal.

Q. You still haven't answered my question yet. Do you contend that the crew of a conductor and three brakemen

couldn't make an adequate inspection regardless of the [fol. 4450] time element if the train was more than 70 cars?

A. They could make an adequate inspection by using the time necessary.

Mr. Mason: Subject to one or two other questions which I may have after the noon recess, that is all for the time being.

The Court: Do you have any further questions, Mr. Strouss?

Mr. Strouss: Yes, I think I will ask those.

[fol. 4451] Redirect examination.

By Mr. Strouss:

Q. You just spoke about the rolling inspection, Mr. Durnil, and the necessity of giving a signal to the engineer to proceed when the train has rolled by. That rolling inspection is under rule 828?

A. Yes, that rule is covered by Rule 828.

Q. And under that rule the train is prohibited from exceeding eight miles per hour for a distance sufficient to permit running inspection when starting; that is correct?

A. That is correct.

Q. That is at least one instance where a signal other than a stop signal is required to be passed from the rear end to the head end, although the rules do not in so many words say that?

A. That is correct. It is necessary that we give a proceed signal, because the engineer must know that the members of the crew are on the rear end of the train.

The Court: Well, Mr. Durnil, when an inspection of the type that you have just mentioned is made where the cars roll by you, does that leave both brakemen and the conductor at the rear when that inspection is completed, [fol. 4452] or is the front brakeman still up with the engineer?

A. Yes, if the members of the crew from the rear of the train, your Honor, get to the head end to permit the rolling section of the entire train the head brakeman will take a position near the head end of the train to watch for proceed signals after the conductor and brakeman get on the caboose.

The Court: Pardon me, it is the rear brakeman and conductor then that make this rolling inspection?

A. Either that, or in some instances, just the swing brakeman and the conductor, and in some instances just the swing brakemen, the conductor doesn't get up there. However, if the other members of the crew don't reach the head end of the train, then it is the duty of the head brakeman to roll his part of the train by to about the point where he knows the rear brakeman or the swing brakeman were when the train started, and that is in accordance with the rule.

The Court: Another question: When a train parts, does the rear segment of that train automatically stop, or does it require some application by the conductor, of the conductor now in the caboose, to bring that to a stop?

A. No; when a train parts while in motion, generally [fol. 4453] the entire train will go in emergency application of the air.

The Court: Both segments of the train?

A. Yes, sir, except, as I tried to explain and I have so testified, it is permissible from Gila and from Lordsburg to assemble cars to the rear of the train which may have the air cut out, to bring them to the terminal for repairs. Assuming that we had five assembled directly ahead of the caboose with the air cut out and the train parted on some hogback or some hump, it would be necessary that we take action to stop that detached portion as best we could to prevent it from colliding with the head-end portion which would demolish the cars and maybe our lives would be endangered by the collision.

The Court: Go ahead.

Mr. Strauss: You were asked concerning the new draft gear. Is it a fact, notwithstanding any changes that may have been made in draft gears, that you still do have slack action in trains?

A. Yes, sir, very much so.

Q. Is it a fact that the equipment, the new equipment is heavier or lighter than the equipment which has been used previously, that is, year after year?

[fol. 4454] A. The equipment is much heavier now than the older equipment. By being of a heavier capacity car permits a heavier contents load of the car, which plays a

very important part in so far as slack action is concerned.

Q. That is, the car or the car and contents which is moving in this slack action is heavier now than previously?

A. Yes, sir.

Q. Now, you were asked about increase in meets and passes and with more trains the necessity of brakemen getting on and off the train? When you make a meet, take a siding for a meet, do you make an inspection of your train at that time if the time is sufficient?

A. Yes, you can kill two birds with one stone there. By meeting a train you can also inspect your train, and if you inspect your train, that would prevent another stop some place to inspect. In other words from the point of that inspection, you are permitted to travel on the Tucson division an additional 65 miles before you again had to stop for inspection.

Q. Well, you have been asked to give dates of different things. Have you any reason for keeping a record of the [fol. 4455] different events that occur while you are at work?

A. No; but I would like to just add in the record that when I was first promoted, and for several years, I carried a little note book. I made a record of each individual trip for my own personal use and also answering questions of my superior officers. The reason I quit that book I was summoned to a lawsuit in the court of El Paso, Texas, as a witness for the company on a damage claim, and the Court wouldn't accept my record unless it was recorded in the train books, so I eliminated that particular part of my record, and immediately recorded all my trips in my train book, and in that case the carrier would furnish me the book and I could then testify as to the train movements.

Q. Now, you were asked concerning defects in cars such as broken wheels, broken flanges, and the like, and the assumption then being based first upon a 20-train operation, then a 10-train operation, as to the number of men who were affected by the hazards. These hot wheels and hot journal boxes, and these other defects, is it possible that you are able to observe those in time to prevent them [fol. 4456] reaching such a condition that they are liable to cause a derailment of the train?

A. Yes, with the 50-car train, it would be much easier for the trainman to observe 50 cars in a train than it would

in a train of 100 cars, and detecting any defects by stopping and correcting them, which may prevent a serious accident.

Q. And if you are unable to observe the defects, such as a heating wheel, is it then that it becomes overheated to the point of breaking?

A. That is true. That is a very dangerous condition on our railroad when that occurs.

Q. You were asked concerning the conductor's valve, and, as I understood the question, it was with the use of the valve with the train stretched—

Mr. Mason: That is not the question I asked. I asked as to the use of the valve, I didn't say whether the train was stretched or not.

Mr. Strouss: In using the conductor's valve, is there any difference in the use of that valve when the slack is stretched in the train and when the slack is bunched?

A. Yes, there is a great difference.

Q. Just explain that.

A. When the slack is bunched and it is necessary to use the conductor's emergency valve, there are two provisos [fol. 4457] recorded in Rule 16 of the Air Brake Rules and Regulations instructing how to use the conductor's valve. The first one is, "When there is immediate danger to life or property, the valve must be opened suddenly to full extent and left in that position until train stops, then closed." Now, if the slack is bunched and it was necessary for me to comply with that part of the rule by suddenly opening the air to emergency application, that would stop the rear portion first and cause a severe jerk on the head end of the train and possibly break the train in two, either drawbars or knuckles. In the second instance, the rule states: "When it is imperative that the train be stopped within a reasonable distance, for example, when a hot-box is noted and a stop signal cannot be transmitted to the enginemen, the valve must be opened gradually and with care to avoid emergency action until it is known that the brakes are reducing the speed of the train, and opening maintained until train stops, then closed." Now, the second portion of this, it isn't an emergency, but it is necessary that the conductor stop the train. Several reasons would be for that, one, probably the conductor figures the engine [fol. 4458] man hasn't sufficient time to make the next sta-

tion for some superior train and he attempts to pass signals to the enginemen and it may be in a curve territory the conductor cannot wait until he goes too far, he must take action very quickly to stop the train to get it in off the main track for the superior train. Other conditions may be, the conductor may figure there is a brake sticking or some dust flying up the train that may indicate something wrong, but not serious, he would then gradually stop the train and go up and ascertain what that trouble is.

The Court: That is what you were referring to in answer to Mr. Mason that there were two methods of the conductor stopping it?

A. Yes, sir, under Rule 16 of the Air Brake Rules.

Mr. Strouss: That is page 28 of Exhibit 319, Rule 16.

Q. When you apply that brake in the caboose, emergency application, does the engineer know that the brake is being applied?

A. If it goes into emergency, he knows it immediately, because it will jerk his engine.

Q. He doesn't know it until you make the application? [fol. 4459] A. No, he doesn't know it until I make the application. He doesn't know then definitely that I have applied the air from the caboose. He may assume that an air-hose pulled off or that the train parted. The engineer has no way of knowing what happened until he is informed.

Q. And if he was working the steam before you made that application, he would be at the time it was made?

A. Yes, that is true.

Mr. Strouss: No further questions.

Recross-examination.

By Mr. Mason:

Q. You don't find anything in Rule 828, do you, Mr. Durnil, that says that you must give a proceed signal to the engineer after you have made the rolling inspection at eight miles per hour?

A. There is nothing in that rule, Mr. Mason, that requires a signal to be given.

Q. Now, suppose that the proceed signal is given from the rear end of a long train, by that I mean a train of more than 70 cars, and the engineer fails to get that proceed

signal, is there going to be any hazard to the train?

A. The engineer isn't supposed to go until he gets the [fol. 4460] signal.

Q. He will go at eight miles an hour until he gets it?

A. No, he will stop.

Q. Then there won't be any hazard in that, will there?

A. No, if he makes the regular stop, no, except he won't go until he gets that signal.

Q. So the failure of the engineer to receive the signal from the rear end after a rolling inspection simply maintains matters until he does get it, doesn't it? He either stops or continues to roll at eight miles an hour until he gets the proceed signal?

A. The engineer uses his judgment about that by the length of the train and the telegraph poles and when he figures that we ought to be on the rear end, he is watching, either himself or the rear brakeman, for that signal, and if he doesn't get that signal and neither does the brakeman give him the signal he will stop; and of course every additional stop made is additional hazard to trainmen on the rear by slack action.

The Court: Would that be true at an eight mile an hour speed?

A. Yes, if the engineer attempted to stop it with his [fol. 4461] straight air, that would cause the cars to all jam right in, because after we make a rolling inspection, the engineer very much dislikes to use his automatic air, because if he does he spoils the rolling inspection for his trainmen, because he is setting the brakes in the train, then we would have to do it all over again if we wanted to know positively that every airbrake in that train was released, and the engineers avoid as much as possible using that air after we have made a rolling inspection until the momentum of the train is picked up to such an extent that he has to use the air to reduce the speed of the train or make another stop.

Mr. Mason: Do you know of any casualty to a trainman which has resulted because of the engineer having stopped after a rolling inspection where he failed to get a signal from the rear end and where there was, as you say, a run-in of slack at the time the stop was made?

A. No, I couldn't say that I know of any casualties, no, sir.

Q. Then the hazard is one of these imaginary things that doesn't result in casualties, isn't it, so far as your experience goes?

[fol. 4462] Mr. Strouss: You are talking about his knowledge.

Mr. Mason: His knowledge and experience, yes. He speaks of hazards but produces no casualty to support the supposed hazards.

A. I have no data of any casualties over that.

Q. Now, in answer to the Court's question, I think you discussed the cutting out of inoperative—of cars with inoperative brakes. Can you give the date and the train number, or some other reference to identify the instance where you had as many as five cars which you switched to the rear of the train because of the air being cut out on those cars?

A. No, sir, I have no record here to produce prior to the placing of the heavier springs in these triple valves that we now have. We used to have, particularly in the hot weather, considerable undesired emergency action, which required constant tests to be made to try to locate these bad triples.

Q. And those have practically disappeared?

A. That is where we would cut the air out of these cars and get them into the terminal.

Q. That has practically disappeared since about 1930 with the introduction of the heavier graduating spring in the K type triple valve, hasn't it?

[fol. 4463] A. Yes, that has been very greatly overcome, we have very little trouble with them now, with the AB brake now, when the air goes in emergency it naturally takes all the air out of the train, which is in effect an emergency air appliance and will stop the train.

The Court: Mr. Durnil, a few moments ago you spoke of killing two birds with one stone in making an inspection at the same time that you were having a meet with another train. Does it ever happen on your district that the train is stopped for the sole and only purpose of making this inspection, which is required every 60 or 65 miles?

A. Yes, sir, particularly between Tueson and Gila Bend on the manifest important trains, on which we are given right over all other trains except first class, that we would

make a continuous run, say, from Tucson to Casa Grande, where we would inspect the train there and also take water there probably.

Q. Now, would that inspection stop be directed by your train dispatcher?

A. No, that is in our special instructions in our timetable, the engineer and conductor must see that the train is brought to a stop for that inspection; the dispatcher doesn't [fol. 4464] have anything to do with that.

Q. You report to him that you had stopped?

A. If it is a telegraph station, he knows that it stopped.

Q. He makes provision for that in your running time?

A. That is right. However, we may go 50 miles, your Honor, meet a train, take water and inspect the train, which would be killing three birds with one stone, then we would be permitted to go an additional 60 miles from that point before we would be again required to make an inspection of the train.

Mr. Mason: You run as far as you can always without stopping, don't you?

A. Under the time-table instructions, we don't exceed that.

Q. What I mean to say is this, you make as few stops as possible when you are handling your train.

A. That is right.

Q. The reason is, as you have expressed yourself in answer to one of my questions, each additional stop involves additional hazards?

A. That is true, slack action and so forth.

Mr. Mason: That is all.

Mr. Strouss: That is all, Mr. Durnil.

[fol. 4465] The Court: It is so near the noon hour, that I presume it is not advisable to put on another witness. The court will be at recess until two o'clock.

(Thereupon, the court stood at recess until April 11, 1941, at two o'clock P. M.)

[fol. 4466]

2 P. M., April 11, 1941

All parties being present as heretofore noted, proceedings were resumed as follows:

The Court: You may proceed. Call the next witness.

ANDREW W. KENNEDY was called as a witness in behalf of the plaintiff and being first duly sworn testified as follows:

Direct examination..

By Mr. Strouss:

Q. Will you state your name, please?

A. Andrew W. Kennedy.

Q. You reside in Tucson, do you?

A. Yes, sir.

Q. What is your business?

A. I am a locomotive engineer at present.

Q. Employed by whom?

A. Southern Pacific Company.

Q. Will you state to the court your experience in rail-roading?

A. You want the experience I have had in train service or the complete service?

Q. You might as well give your complete service.

[fol. 4467] A. I put two and a half years in the shop. I put on all the driving boxes between El Paso and Yuma for sixteen months as a machinist. I worked on the bridge gang a short time, very short time, and I quit the bridge gang and later I went to work in the shop for about two months and I quit the shop and hired out on the road, firing, in 1916.

Q. You have been continuously—

A. (Interrupting) Except the time I was in the government service.

Q. You have been continuously in the employment—

A. (Interrupting) Of the Southern Pacific Company in engine service.

Q. When were you promoted to engineer?

A. I was promoted in 1925 but I have a date as an engineer in January, 1926.

Q. What service do you work in, passenger or freight?

A. In freight service.

Q. In what territory?

A. I work between Tucson and Lordsburg.

Q. Do you have an assigned run?

A. Yes, sir.

Q. What length of trains have you operated as an engine-
[fol. 4468] neer?

A. I have handled from 100 cars down to 10 cars in freight service.

Q. Will you state to the court the duties of an engineer on the Southern Pacific, beginning at the time he is called for service?

A. When we are called for service we get an hour or an hour and a half or two hours call and we report at the round-house, supposed to report thirty minutes early. I generally get down there a few minutes ahead of that if I can. We have to register out, compare watches, and make a notation on the register, read the bulletins to see if there is anything new. Then we go out to the engine and I look at the water glass and steam gauges and look the engine over in the cab and I also check to see if we have the necessary tools and supplies, water, oil and sand. Then I oil around, and while oiling around I inspect the engine to see that it is in serviceable condition, see that my lubricator is full and see what is needed on the engine to make the trip. As a rule, then, we move up a little bit and take drinking water on the engine. From there we go out to the train. In Tucson, where there is a switchman employed, the herder puts us on the train; he [fol. 4469] is a switchman, but at other places where there should not be a herder or switchman employed the brakeman either puts you on the train or if there is a little switching, why we have to do that also before we couple up to the train. Do you want just as if I was going to start on out?

Q. Yes.

A. When we couple up to the train, you understand the car toad generally makes the joint and couples the air and when the train is pumped up he gets the signal back there from the car toad in the rear that everything is satisfactory back there, then he gives me the set-up signal and I make the required reduction and the car man goes back, and when everything is satisfactory to him he comes over and gives me the release signal. About that time the conductor is generally over there with the orders and I have to check the register, check for all the trains due, have arrived or left, and read my orders to see what they contain, see what I am going to run at and one thing and another. When I find out what I am going to run at, I tell the fireman and he puts up his indicators. I also must go down and see that the indicators are properly displayed. About that time the blue light that is on the head of the engine should be off, if the blue [fol. 4470] light is off, taken off by the car man I am ready

to go. I leave there. I must observe all the signals, switches, and one thing and another until I get out of the yard and when I get out on the road I must observe all signals from there on until the end of my run. I have to keep a continuous watch on the track on account of there might be a flag anywhere and especially around curves where I have a good chance to view the train. There are places on the district where it is necessary for me to shut off and adjust the slack and places where I practically shut off to nothing and handle the air down the hill. I stop, take water, and one thing and another, inspect my engine to see that the bearings are all right, maybe oil around, just continuous like that until I reach the other end of the line. When I reach the other end of the line, the trainman or the switchman, the herder, cuts you off and takes you back to the roundhouse. There I look my engine over. Of course I have looked the engine over on the run to see if there is anything that needs reporting or anything has happened and it is necessary for me to register in and make out a work report, make out my time slip, and I am through for that trip.

[fol. 4471] Q. In operating the locomotive are you required to understand the operation of the air brakes?

A. Yes, sir.

Q. In taking your examination for promotion are you examined with respect to the operation of the air brakes?

A. Yes, sir.

Q. You are familiar with the air brake equipment on the locomotives of the Southern Pacific Company that you work on?

A. Yes, sir, on the kind that I work on, yes, sir.

Q. Will you describe to the court the air brake equipment on the locomotives on the engines you work on?

A. Do you want the equipment or do you want how it works?

Q. I want the equipment first.

A. We have an air pump, that is first. Then the pipe from there to the main reservoir, a pipe from one main reservoir to another main reservoir. The pipe from there to the engineer's automatic brake valve. There is an independent brake valve. There is a feed valve, there is a reducing valve, there is a distributing valve, also an equalizing reservoir. [fol. 4472] There are brake cylinders and a hose connection that goes back to the brake cylinder on the tank. Some engines have as high as five brake cylinders.

Q. Do those brake cylinders operate the independent brakes on the engine?

A. No, sir, the independent brake—well, the brake cylinder is what operates the brakes on the engine and tender, but the brakes are operated either by the independent or automatic.

[fol. 4473] Q. Now, that is the equipment?

A. That is the equipment on a locomotive.

Q. You have two main reservoirs?

A. Yes. Now, there is more air equipment, but as far as brake handling is concerned. Now, we have the air sanders and air bell-ringer, automatic bell-ringer, and we have the air agitator to agitate the sand.

Q. Those don't have anything to do with the braking equipment?

A. No, that is why I didn't mention it.

Q. Now, you have two main reservoirs?

A. Yes, sir,—pardon me, we also have air gauges that does come in the airbrake equipment.

Q. Your main reservoirs, are they the same pressure?

A. The main reservoirs are the same pressure.

Q. What pressures do you carry?

A. The minimum is 110 and the maximum is 125.

Q. Now, how does your air get from the engine to the train?

A. The air that gets to your train from the engine goes, it comes from the main reservoir up to near the engineer's brake valve, it either must go through the feed valve or the automatic brake valve.

[fol. 4474] Q. Now, this automatic brake valve, will you describe that, the automatic brake valve on a Southern Pacific engine?

A. The automatic brake valve on a Southern Pacific engine is a brake valve so designed that you can make practically any rate reduction desirable. It is so designed that it will not apply the brakes too rapidly that will cause undesired emergency; it is also designed so you can apply it in emergency.

Q. How many positions does your brake have?

A. It has six positions.

Q. What are they?

A. The release, running, holding, lap, service and emergency.

Q. Did you hear Mr. Cooper's testimony?

A. I heard part of it.

Q. His description of the Santa Fe brake and the positions—

A. Why, just identically the same as the Southern Pacific.

Q. Then the air from the locomotive passes to the train either through the engineer's valve or through the feed valve?

A. That is correct.

Q. And how does it get then back to the train after it [fol. 4475] passes these valves?

A. Well, there is only one valve that it passes, the engineer's brake valve, I don't call it a brake valve, you can call it a brake valve if you wish, but it goes into the brake pipe, from there it goes down under the engine through a hose back through another brake pipe, and one in each car on down, which is all one brake pipe.

Q. Did you hear Mr. Cooper's testimony as to brake equipment on cars?

A. Yes, sir.

Q. Is that the same on the Southern Pacific?

A. Yes, that is the same.

Q. Now, in operating these brakes, how do you make an application of the air, just to explain the operation of the brakes, start with the time you couple into the train, what do you do?

A. You mean now I am making application for running along, or for terminal test, or application to stop?

Q. First to charge your train.

A. You charge your train to within—well, the train appears to you to be charged, but the rule says within five pounds, the car man will give you a signal to apply the brakes.

The Court: How long does that take?

[fol. 4476] A. Now, if the train is empty, why, it takes—now, that depends upon equipment, it depends on whether it is K or AB, and how many cars are in a train. You can charge a short train much sooner than you can a long train, and it also depends upon the leaks. Now, we don't have many cases—I mean AB's. It takes ten minutes to charge a train to 70 pounds with an AB if the pressure is maintained

at 70 pounds continuously from zero, but we don't have many of them.

The Court: How long does it take with the others?

A. With the K's, why it only takes about—well, there is 2440 cubic inches in a K, and 6000 in an AB, you can figure that out, it is a little better than a third of the time.

Mr. Mason: Just so I may understand this, this is an initial charging when the train is standing at the terminal?

A. That is from nothing.

Q. When the train is standing at the terminal immediately after coupling up?

A. Yes, sir.

The Court: Now, if that train had been in use, that is different?

A. That is different.

[fol. 4477] Mr. Strouss: If you had made an emergency application, you would have to recharge?

A. Yes, but that is still a different case, because your auxiliaries and emergency reservoirs still contain air.

Q. But your brake pipe wouldn't?

A. No, your brake pipe wouldn't.

Q. What pressure do you carry in the brake pipe?

A. The standard pressure in the brake pipe on the Southern Pacific is 70 pounds, but it is permissible to carry 90 in freight service if the engineer deems it necessary.

Q. How do you make an application of the brakes?

A. You place your brake valve in service position, you watch the gauge pointer from the equalizing reservoir, and you try to make your reduction by watching the gauge pointer from the equalizing reservoir and if it indicates around eight pounds or seven pounds or ten pounds, the automatic brake valve will automatically—that is, you move it back to lap, you understand, after you draw it down so much, and the automatic brake valve is so designed that it makes the rest of it, it allows the service piston to raise, [fol. 4478] you know, and air comes out of the brake pipe and it is taken care of through the automatic brake valve.

Q. The operation then is that in placing the brake valve in service position—

A. It will continue to apply until you move the automatic brake valve back to lap.

Q. And in placing it in service position, that permits a certain amount of air to exhaust to the atmosphere?

A. Well, it will continue to exhaust unless you place it in lap, you make your own amount of reduction.

Q. What is the effect upon the brakes then in the train?

A. Why, the brakes begin to apply on the head end and gradually apply down through the train, they apply in a gradual way, gradually set, and they are set on the head end first.

Q. Now, in making a release of the brakes, how is that done?

A. Well, that release, as a rule, they generally release on the head end first; it is possible, and on standing still we try to drive the air back to the rear end as much as we can, but it don't get there first.

Q. What is the operation on the engineer's brake valve [fol. 4479] in making a release of the brakes?

A. In a release of the brakes standing still, you go to full release and you stay there about 25 seconds, I suppose, 20 or 25 seconds, and gradually come around to running, and after you have hesitated, I would say, a reasonable time, you go in release and make what we call a fairly long kick-off; it may not seem long by seconds, but it is quite long, and then you make a short kick-off, and I have made a right short kick-off to prevent an overcharge on the head car.

Q. Now, in making a release, what is the operation there in respect to the air?

A. In making a release?

Q. Release of the brakes?

A. What is the operation?

Q. In so far as the air going into or out of the brake pipe?

A. In releasing the brakes, you have to build the air up in the brake pipe and in the brake pipe side of the triple valve, and you must build the pressure up greater than the pressure is on the auxiliary reservoir to drive that triple in the position towards the auxiliary reservoir, and you have to carry a slide valve and graduating valve, and they [fol. 4480] are supposed to release in two pounds, but it is a fact that some triples don't release under five pounds, and it is a mighty good one that does release with two pounds' variation, differential.

Q. Now, are there any difficulties or problems, particular difficulties or problems in the operation of brakes and the handling of trains which you have to guard against?

A. Yes, there are a lot of things that you have to take into consideration in handling a train in regard to handling the brakes.

Q. I want to read to you from Exhibit 319, Southern Pacific Company, Air Brake Rules and Regulations, page 8: "Smooth train handling depends on the ability to control the slack and how to prevent it from running in or out harshly." Have you found that to be true?

A. I have found that to be true.

Q. Is that one of your problems or difficulties?

A. That is one of the most important things that an engineer must consider at all times, is the slack action.

Q. Reading further: "Where so controlled, no draft gear in fair to good condition will be damaged. Slack action cannot be prevented, but by acquiring knowledge [fol. 4481] of the various causes for it, and exercising forethought in the use of steam, train brakes, independent engine brakes and sand, it can be controlled, even to the extent of avoiding further injury to damaged draft gear." Have you found that to be true?

A. That is true.

Q. Is it always possible to control—

A. Well, it is true that you have to try to arrange to adjust this slack the best you can, that is true, but there are times and quite often that you can't adjust at all; you can't absolutely take care of all of the slack, no, is that what you mean?

Q. Yes.

A. I just didn't understand you.

Q. Reading further: "The heavier the engine and the longer the train, the greater is the care required."

A. That is right.

Q. "When slack runs in or out one part of the train gradually attains a lower speed than the other, and the shock is the result of draft gears having suddenly to make the speed uniform on the instant slack is all in or out. How heavy the shock will be depends mainly on the difference [fol. 4482] in speed that must instantly be made uniform and on the weight that must suddenly be altered in speed." Have you found that to be true?

A. That is true, but there is still some changes there. You understand, the faster you are traveling the easier it is for the slack to adjust itself; the slower you are traveling, even if one speed is slow and another speed is not much

faster, say, at four miles an hour, you stop at once, and the other is traveling five miles an hour, that shock is still serious, but traveling at a high rate of speed you can adjust the slack better.

Q. At low speed, is there any greater braking power with your brakes?

A. Oh, yes, much more.

Mr. Mason: Do you really mean that, Mr. Strouss, or do you mean more effect from the braking power?

Mr. Strouss: Whichever way you want to interpret that question.

Mr. Mason: You get 70 pounds of air at 70 miles an hour the same as at five.

The Witness: Yes, but there is much more braking power at different speeds.

[fol. 4483] Mr. Strouss:

Q. Reading further from exhibit No. 319, "With high pressures and large main reservoirs it is very easy to overcharge the head end of the train; many detrimental effects result, such as stuck brakes, flat and broken wheels. Many are of the impression that because the brake pipe gauge shows higher than the auxiliary reservoir pressure is intended to be, that all brakes are released; as a matter of fact this is a condition that exists only on the first few cars in the train, the pressure at the rear not having sufficiently increased to release the brakes. In fact, 25 cars back from the engine it cannot be determined whether the brake valve handle is in release or running position."

A. That is true, I have found that to be true.

Q. In other words, when the gauge on the engine shows the pressure equal to or in excess of the brake pipe pressure, you still may have back 25 or 30 cars a pressure considerably less than that shown on the brake pipe gauge?

Mr. Mason: I object to the question, the witness is not shown to be properly qualified, it is not indicated he has ever ridden 25 cars back or had any gauge back there.

The Court: Yes, the objection will be sustained.

[fol. 4484] Mr. Strouss:

Q. Mr. Kennedy, in operating your train you are required to observe it while you are in motion, are you not?

A. Yes, sir.

Q. In so observing are you able to tell whether the brakes are applied or not applied in different parts of the train?

A. Yes, sir, especially at night.

Q. From that would you be able to judge whether the brake pipe pressure was charged up to what your gauges show?

A. Yes, sir, but that is not the only way of telling. I can tell on the gauge. I may not be able to tell the number of cars back it has charged but I can tell pretty closely.

Q. How do you tell that?

A. You learn that in running, you learn that by watching your gauge pointer. Another way is by placing your brake valve in lap position and allowing the brake pipe air to equalize.

Q. Reading from page 11 of exhibit No. 319, "An automatic brake application will cause the brake pipe pressure to reduce faster at the head end of trains than at rear." This results in the head brakes applying in advance of those at [fol. 4485] the rear, and tends to bunch the train and compress the draft gears."

A. I have found that to be true.

Q. (Reading) "In releasing, the head brakes commence so much before those at the rear that, as far as holding power is concerned, they are practically off before the rear ones start to release, causing the slack to run out rapidly. Just how serious the results may be largely depends on how heavily they are applied, the amount the draft gears are compressed, and how slowly the train is moving." Have you found that to be true?

A. I have found that to be true.

Q. Does the length of the train have any effect upon the ability of the engineer to control the slack in the train?

A. Yes, it has a great deal to do with it.

Q. What effect does it have?

A. In the first place, very seldom if ever you have the same pressure on the hind end that you have on the head end.

Mr. Mason: I object to the answer and ask that it be stricken. The witness has shown absolutely no qualification to state what the pressure is at the rear end. It is not indicated he has ever ridden in the rear end for the purpose of [fol. 4486] observing pressure at the rear end.

The Court: Objection overruled. He stated he could tell.

Mr. Mason: I think he only stated he could tell whether

the brakes had released at the rear end. He didn't state that he could tell what the pressure was at the rear end.

Mr. Strouss: He stated, if the Court please, he could tell by his engineer's gauge and valve whether or not the difference, not the amount in pounds, but whether there was a difference in the pressure.

The Court: The court has ruled on the objection.

A. I would like to make that a little different. I said I could not tell the number of cars that it was charged the same as on the head end but I can tell pretty close whether it is very near or whether it is a long ways from being charged, I can tell.

Mr. Mason: Just a moment, I would like to inquire, I don't believe the witness is qualified and I would like to inquire because I think he is going beyond the bounds of his qualifications.

The Court: Go ahead.

Mr. Mason:

Q. You didn't state, did you, that you have any means of [fol. 4487] telling what the air pressure is in the brake pipe at the caboose?

A. I was not asked that question.

Q. Have you any way of telling from the engine or from the gauges in the engine what the air pressure is in the caboose?

A. I can by lapping my brake valve.

Q. What does that show you?

A. It shows me if I wait long enough, it will show what the equalization is.

Q. Will it show what the pressure is in the caboose?

A. Yes, sir, it will show what the pressure is in the caboose when the air equalizes.

Q. Where does it show it?

A. It shows it on the brake pipe gauge pointer in the cab, brake pipe pressure.

Q. You can tell that in a train of any length?

A. Yes, sir, any length I can tell.

Q. You can tell that regardless of the fact there may be an angle cock turned in the middle of the train?

A. I can tell that, it depends on whether the angle cock is turned, I can tell when the angle cock turns, I can't tell whether it is ten cars or sixty cars.

[fol. 4488] Q. If you wait long enough after turning your handle to lap position in the engine cab, you can tell what the reading is on the conductor's gauge at the conductor's valve in the caboose?

A. After I let the air equalize.

Q. After turning your brake handle to lap position?

A. I put my brake valve to lap position until the air equalizes; I can tell the pressure on the gauge in the caboose.

The Court: Is the lap position that you refer to as being one of the six positions that the engineer's brake valve is carried in, is that comparable to neutral in a car?

A. Yes, sir.

Mr. Mason:

Q. You say that you can tell just what the conductor's valve reading will be?

A. No, sir, I don't exactly mean that. I can't tell the pressure back there, the gauge may not read the same as mine.

Q. I thought you said you could tell what the reading would be on that gauge?

A. Oh, no; I don't mean that, sir.

Q. When you say that you know what the pressure is back there from your gauge in the engine, do you take into account the leakage in the train line?

[fol. 4489] A. We will say we got 70 cars and we got an ordinary everyday train. The air will equalize in a reasonable length of time and then from there on it will leak down a little more, yes, but you will not miss it but very, very little.

Q. You say it will equalize but, that equalization is subject to leakage, is it not?

A. No, sir, equalization and leakage are two different things.

Q. What I mean is this, what you see before you on the gauge in the engineer's cab does not necessarily represent the pressure in the train line at the caboose because you have leakage take into account?

A. You are right, when you are running along, you are correct.

Q. Again, I would like to ask you this, you say if you leave the lap position a long enough time you can tell what

the pressure is in the train line of the caboose. How long do you have to leave it there?

A. That depends on the length of the train and the leakage.

Q. If you don't know what the leakage is, you don't know how long it would have to be?

[fol. 4490]. A. We would make a terminal test when we leave, three pounds for thirty seconds. If we are carrying eighty pounds we make it from sixty-five, but we carry seventy pounds and make it fifty-five. We take the leakage from fifty-five pounds on a seventy-pound brake pipe pressure.

Mr. Mason: All right, Mr. Kennedy, there are responsible authorities that do not agree with you.

The Court: The objection is overruled, proceed.

Mr. Strouss: Will you go ahead and explain?

A. I don't know where I was at.

Q. I will reframe the question. First, you mentioned three pounds per second. Is that the amount of brake pipe leakage that is allowed under the Southern Pacific rules?

A. Yes, sir.

Q. Three pounds per second?

A. Three pounds per second, that is when you make the terminal test—no, no, three pounds in thirty seconds I said.

Q. I meant thirty seconds and I had it written down thirty seconds. To reframe the question I asked before, does the length of the train have any effect upon the ability [fol. 4491] of the engineer to control the slack action?

A. Yes, sir.

Q. Will you explain that?

A. The length of the train makes it harder to apply the brakes on the rear end, they are slower to apply on the rear end and the slack will run in on you. Also the pressure is not as great on the rear end, they do not set as hard on the rear end and also if the pressure is very much less on the rear end and you make the average reduction that you make every day some of the brakes do not apply at all on the rear end and if they did apply on the rear end a brake that did apply only four pounds did not apply as far as developing energy against the brake shoe. I will have to explain that maybe so you will understand. We will say we make a seven-pound reduction or an eight-pound reduction, we will say seven, it doesn't make any difference, a

seven-pound reduction on the brake on the head car; I can get within half a pound of it, is that close enough without figuring it out?

Q. Yes.

A. Probably eight and a quarter pounds, maybe nine pounds on the head car. All right. Now we will say we take 70 cars and the pressure is three pounds different. It is a known fact that the pressure is much less than that [fol. 4492] sometimes.

Mr. Mason: Your Honor, I move to strike that statement, "It is a known fact."

The Court: It may be stricken.

Mr. Mason: There is no authority for that.

The Witness: The gauges show it, we are handling it every day.

Mr. Mason: I ask that that last remark be stricken.

The Court: The Court has ruled on it, it may be stricken.

The Witness: You have the three pounds' difference, you would make a four-pound set on the rear end. Four pounds goes into the brake cylinder, fills that space that is known as vacuum, there is nothing there and we are working against atmospheric pressure. In reality it takes pretty close to three and three-quarters or seven-eighths or something like that but with the tension of the spring you can say four pounds of air that you have to take out of the auxiliary reservoir to go into the brake cylinder to fill this space that the eight-inch pistons travel. If the piston travel is longer it takes more and you fill that space ready to develop energy but you have no brakes, no pressure against the brake shoes.

[fol. 4493] Mr. Strouss:

Q. What effect does the length of the train have on the releasing of the brakes?

A. You understand there is resistance and there are angle cocks and curves in the brake pipe, down through that hose; and the length, there is an amount of friction that builds up in a brake pipe and the further you go back the pressure gets weaker and weaker until you have very little pressure or effort to try to even get back there. You can go far enough that it won't get back there.

Q. What territory are you working in, have you stated?

A. I work between Tucson and Lordsburg at the present time.

Q. Is that a mountainous territory?

A. Yes, we have four hills over there.

Q. Is there any particular problem in handling trains and handling slack in mountainous territory?

A. Yes, between Tucson and Lordsburg is the most difficult district to handle the slack.

Q. In exhibit No. 319, Southern Pacific air brake rules, page 29, appears the following: (reading) "Rule 19. Heavy grade braking; the one-application method must be employed when descending grades and using retaining valves. The engineer must charge the brake system to standard pressure before leaving summit of grade, then after leaving, make one or more brake pipe reductions and permit train to attain the desired speed. After this has been accomplished, pressure on the gauge must be observed and the brakes released. The brake valve handle must be in release until the pressure is restored before returning it to running position. Just before the train begins to gain speed, one reduction must be made, bringing it down to where it was immediately before releasing. After brake valve exhaust closes and train is about to slow down again, release must be made as before. This operation must be continued while descending the grade, the speed being kept low enough to permit restoring the amount of air used on the previous application." Is that the method of braking?

A. That is the method of braking, yes, sir.

Q. Is that what is known as the short cycle?

A. Short cycle or short hold.

Q. You are familiar with the long hold and the overcharge?

A. Yes, sir, I understand the overcharge and the long hold.

[fol. 4495] Q. But the short cycle method is used?

A. It is used here, yes, sir.

Q. Do you have any difficulty in controlling slack by the use of that method?

A. Yes, slack runs in occasionally and slack sometimes runs out.

Q. Does the length of the train affect your ability to control the slack in mountain operation?

A. Yes, sir, it has all to do with it.

Q. Will you explain that?

Mr. Mason: I suggest, your Honor, that this question has been asked and answered. I don't know why it must be repeated.

Mr. Strouss: I haven't asked him about the controlling of slack and its effect on long trains in mountain operation.

The Court: No, the objection is overruled.

Mr. Strouss: Go ahead.

A. Controlling slack going downhill, you understand your train is fully charged as near as you can charge it and when you make your first application and you slow your train down to a reasonable speed, a speed that you think you can recharge and a speed under the maximum, say it is 35 miles an hour, we try to maintain an average speed if [fol. 4496] we can. We don't try to slow it too slow like we used to years ago, but we slow it down to where we think we can recharge the brake pipe and release them. Using this short cycle method, short hold, like we do, we have loads, they release of course the same as the empties, but the loads pick up and here we go and before we have time sometimes to charge the brake pipe the speed is so high we have to go after them again. That time means you got to use more air and from that time on then you are liable to have more or less slack because you are getting less air to the rear of your train, less time that you are recharging it, you don't get it recharged any more. You charge it but not fully charge it.

Q. Are those brakes applied then on the rear of your train?

A. Sometimes they don't ever apply at all on the rear of the train.

Q. The rest of your train is carrying the braking load?

A. Yes, sir.

Q. Are there any dangers in the long hold method?

A. Yes, sir, there is danger in the long hold. It brings about hot—

[fol. 4497] Mr. Mason: I object, if your Honor please, the witness has testified he does not use the long hold and the rule book shows that the short hold is the one that is required. I don't know why we have to discuss the long hold at all. It is obviously a discussion of mere moonshine as far as this case is concerned.

The Court: Objection overruled.

Mr. Strouss: Go ahead.

A. The long hold system, you apply the brakes and hold them applied a long time. Some people call it bridging. The reason why they call it bridging is because they put the brake valve half-way between neutral, as you spoke of, and holding position, or, in other words, running position you might say. The purpose of it is to keep air going back into the brake pipe, to prevent any further leakage, prevent the train from slowing anymore and to keep your speed up and you hold your speed and you can run for two or three miles if you have good luck and happen to be fortunate enough to make the proper amount of reduction that you don't have to release any or have to set any more but it heats the wheels and is prohibited here. At least they don't want you to have anything to do with the long hold. There [fol. 4498] are places where they wouldn't say anything. Some places for a very short distance but you use the long hold for three or four miles and the wheels gradually get hot and when they cool off they are liable to crystallize and if the wheel doesn't break here it may break in Yuma or someplace else and they don't want it handled in the long hold.

Q. Is the overcharge method, does it have similar dangers?

A. Overcharge has similar dangers. There is the possibility of getting the brake stuck that you cannot get off and you have to stop and bleed it off.

The Court: We will take our mid-afternoon recess at this time.

(Thereupon a short recess was taken after which proceedings were resumed as follows.)

[fol. 4499] The Court: You may proceed.

Mr. Strouss: Mr. Kennedy, do you have any duties with respect to observing the train while it is in motion?

A. Yes, sir.

Q. What are those duties?

A. Well, we always keep an eye peeled back as much as possible in addition to watching the head, and especially around curves and any place you can observe your train, there might be dirt flying, at night there might be fire, or smoke in daytime from a hot-box, from a brake sticking, sometimes we do find something dragging. It throws up a little dust or something like that, you know, it might be a

brake beam down. We also have to watch back for signals, sometimes they want to stop, and that brake beam may be dragging on the rear end, at night we may see a red fusee, we have to keep our eye peeled for that.

Q. One question with reference to slack, are there any peculiar territories, any peculiar territory in the district you operate which affects slack action?

A. Yes, we have—now, you are talking about just the train running along, or on side-tracks where you pull out?

[fol. 4500] Q. A train running along.

A. We have hogbacks, we have two places between Dragoon and Cochise where slack runs in on us, one just before you get into Manzoro, and another place after you leave Manzoro before you get to Dragoon, before you get to Cochise, we have a place coming off of Steins down at—I can't think of the town now, the second siding this side of Steins, Vanar, and we have a place on the west end, we have several places, we have one place on the west end just a little short place, one day I was riding deadhead in the caboose and banged my head against the door. I said, "What is that?" He said, "That is our alarm clock," just out of Gila Bend we were going 40 miles an hour, I was deadheading in the caboose and it is about three-and-a-half miles, I could tell you on the time-table, I never did check it, but it is just out of Gila Bend, just a short distance, a little hole, I got an awful wallop, I wasn't used to dead-heading, I didn't know what went on.

Q. Is it necessary in operating a train for the trainmen on the rear end to communicate with the engineer at times?

A. At times it is very important that he should know what they want to do back there.

[fol. 4501] Q. How is that done?

A. Hand signals, or light signals, a fusee.

Q. That is the only means?

A. That is the only means we have, yes, sir.

Q. What effect, if any, does the length of the train have upon your ability to stop the train or to start it?

A. Well, you understand, the longer the train the slower the brakes apply and the slower they start to apply and the less they do apply on the rear also, where you can stop a train with 70 cars, a length of 70 cars, it would take to stop a train of a hundred cars on the same grade, perhaps a hundred, I cannot give you this right to the foot, but almost twice as far as 70 cars. I never measured it, I didn't go

that much in detail, I didn't handle enough of them, but it is more than the length.

Mr. Strouss: Take the witness.

Cross-examination.

By Mr. Mason:

Q. Mr. Kennedy, you have 15 years' seniority as an engineer?

A. I have about 15 years as engineer, yes, sir.

Q. How long have you been actually running as an engineer [fol. 4502]?

A. Well, sir, I ran a little bit in 1926 for the first couple of years, few years, I ran a little bit, very small trip or two in the wintertime, the depression came on and I didn't run for several years, I don't know how long, then I believe I made one or two trips, then maybe a couple of weeks, then 1936 or sometime along in there came along, and I don't remember, I don't keep no record, I know I went back firing one time, but I know I only made one trip firing when I did go back that time, I have no record, but since 1936, as near as I can recall I practically have run continuously.

Q. You have been employed as an engineer then continuously for about the last five years?

A. I would say, I couldn't tell you exactly.

Q. Prior to that time then, since 1926, your employment as an engineer—

A. Fireman.

Q. —was more or less infrequent, you spent most of your time back firing?

A. Yes, sir.

Q. I wish, as a courtesy to me and to the reporter as well, that you would not interrupt the question.

[fol. 4503] A. Thank you.

Q. Now, you have never run an engine, have you, between Lordsburg and El Paso?

A. Yes, sir.

Q. Have you run an engine between Tucson and Yuma on either one of those districts?

A. Yes, sir.

Q. Your seniority extends from Yuma to El Paso, does it?

A. Yes, sir.

Q. But in so far as that district is concerned, you are comparatively a junior engineer, aren't you?

A. Well, I don't think so; I don't consider myself so.

Q. Well—

A. My hair is getting quite white.

Q. I refer to your place on the seniority list.

A. Oh, well, I am a fairly young man on the list, but—

Q. Your place on the seniority list determines whether you shall have the choice of runs, doesn't it?

A. Yes, sir; I am holding the best run on the Tucson division.

Q. You are holding the run of your preference now?

[fol. 4504] A. Yes, sir, and I can hold it on any district in the Tucson division.

Q. What are you in, through freight service between Tucson and Lordsburg?

A. Yes, sir.

Q. I understand that you have made quite a study of air-brakes?

A. Well, I have studied it some, yes. I enjoy studying air, I study machinery.

Q. You have been familiar with the locomotives on the Tucson division and between Yuma and El Paso since prior to 1916, haven't you?

A. You mean since that, from 1916?

Q. Yes, and before that.

A. Yes, and before 1916.

Q. Now, these locomotives—

A. Now, you are talking as a road man, I wasn't in engine service prior to 1916.

Q. But you have observed them pretty closely from working on them and around them, haven't you?

A. Yes, sir.

Q. You are using now predominantly the 5000 Class locomotive?

A. At the present time I am using mostly 5000, yes, [fol. 4505] sir.

Q. And they have a new and improved type of brake equipment, haven't they?

A. The 5000 has the E. T. 6.

Q. Are you sure it isn't the 8 E. T.?

A. The E. T. 6.

Q. You have double pumps on all those 5000 class engines?

A. Yes, sir.

Q. And double reservoirs?

A. Yes, sir.

Q. What is the capacity of those reservoirs?

A. I don't know, I don't have it in my pocket, I did know, and I can get that.

Q. What is the tractive effort of those 5000 class locomotives?

A. I don't know on the form you have what the tractive effort is, I can tell you what they pull on different grades on our district.

Q. You don't know the tractive effort?

A. No.

Q. Do you know what the weight on the drivers is?

A. It is over three hundred thousand.

Q. Do you know what the boiler pressure is?

A. Yes, sir.

[fol. 4506] Q. What is it?

A. 225.

Q. How much oil do you carry in the tender?

A. How much oil? We carry about 4800 when it just about full, we don't fill it right to the top.

Q. How much water?

A. We carry 16,152, I think it is.

Q. You are sure it isn't 12,000?

A. Oh, I know it is 16,000.

Q. The brake equipment on the freight cars that you handle in your trains is the same on all of the cars regardless of the ownership name stenciled on the side, isn't it?

A. Why, the cars that I handle are every day cars.

Q. You handle foreign line cars as well as Southern Pacific Company cars?

A. Yes, sir, anything I happen to get.

Q. And P. F. E. cars?

A. Yes, sir.

Q. And the brake equipment works the same on them all?

A. Well, there is some difference, but speaking the way you would say, it is the same brake equipment.

[fol. 4507] Q. It is either the K-2 type triple valve, or the AB valve, isn't it?

A. It is either the AB or the K-2.

Q. When you spoke of slack action, now, if I understand correctly, slack action is the effect of the slack in the train as it is developed as the train moves; is that correct?

A. Slack action is developed by one part of the train wanting to run faster or slower than the other.

Q. And it is the effect of the train motion upon the slack, isn't it?

A. Well, there would be no slack if the train wasn't moving.

Q. Wouldn't the slack be there?

A. The slack would be there, but not as we speak of it if the train was standing still.

Q. The slack is something that belongs to each car, isn't it?

A. The slack is the amount of loose space between each car.

Q. When they are coupled?

A. When they are coupled together.

Q. It is the amount of motion of which the draft rigging of the car is capable when the car is coupled, isn't it?

[fol. 4508] A. The give.

Q. And the slack action is the accumulated effect of that as you move along in different situations, isn't it?

A. Yes.

Q. I think you said that slack action is determined to some extent, or at least the effect of slack action is determined to some extent by the speed at which the train is moving?

A. No, pardon me, if I said that; I said the slack—I said the shock is determined on the speed, I said the shock would be not so harsh traveling at a high rate of speed because at high speed it is easier to absorb the shock.

Q. That refers, I suppose, only to the slack action that develops when there is an emergency at the head end of the train, isn't that correct?

A. No, that applies all the time even whether you set the air.

Q. You won't feel the shock so great from slack action if the speed is high, is that correct?

A. That is correct, whether you set the air or not.

Q. Then the harsh effect of slack action, I take it, is only at low speeds?

A. That is when you get the hardest blow, is at low [fol. 4509] speed.

Q. Now, I think you said that the braking power is greater at low speed. Isn't the braking power the ratio of the effect of the brakes, the effect of the pressure on the wheels by the brakes used to the weight of the car?

A. Do you want me to go into detail?

Q. No, I want you to answer my last question.

A. The brakes are not the same, and speed makes a world of difference in the brake effort.

Q. Speed makes a difference in the result?

A. Yes.

Q. Because at low speed you have no momentum, and at high speed you do?

A. Yes, and you don't get that much co-friction.

Q. Mr. Kennedy, you said that by waiting long enough, you could tell from your gauge in the engine, if you placed the valve handle in that position, what the pressure in the train line was at the rear end of the train?

A. Yes, sir.

Q. And that is, irrespective of the possibility that—

A. Wait a minute, providing it is cut through.

Q. Providing it is cut through?

A. Yes, sir.

[fol. 4310] Q. That is provided that there isn't any angle cock turned then?

A. Well, now, I was speaking, when I answered your question, after taking the tests and running out on the road, and setting the brakes, I could tell by the equalization of the pressure, the pressure and one thing and another, but I didn't expect you to state—I can tell if you turn an angle cock in a train, and I am running along, it won't be long until I can tell it is turned.

Q. You say this test you can make at the engine will enable you to tell what the gauge reading should be in the caboose then?

A. If the air is cut in.

Q. If the air is cut in. Now, you agree pretty well with what is set forth in this airbrake book, don't you, as a proper method to follow in the handling of trains?

A. Yes, sir.

Q. Let me read you something from page 31—you are probably very familiar with it: "After train has been made up and yard test plant or engine is attached, an inspector will observe gauge in caboose or one attached to

brake pipe hose at the rear of train"—now if you can tell from your gauge in the locomotive by placing your brake [fol. 4511] valve handle at lap what the brake pressure is in the rear end, why is it necessary or desirable as shown in this rule, for the inspector to observe the gauge in the caboose, or to attach a gauge in the rear of the train?

A. The inspector wants to know that that brake pipe is charged sufficiently so that it will act the same as when it gets on the road when he makes the test.

Q. You want to know that too?

A. Yes, sir, and so does he.

Q. It is more important to you because you are going to ride the train?

A. Yes, and I can tell by shooting the air back there whether I have 50 cars or 80.

Q. It is necessary, according to the rule here, with which you have agreed, to make that rear end test with the gauge in the caboose or attached to the train line, isn't it?

A. Well, there are cases occasionally can happen where we do get a plug test to satisfy the engineer.

The Court: What do you mean by a plug test?

A. You charge your brake pipe, you have somewhere or for some various reasons the brake pipe has been broken, you understand, and maybe with something may pick up [fol. 4512] cars or in local work some place, cut a couple of crossings, and we blow one long blast of the whistle and that is a signal for the trainman to open up the angle cock on the rear end, we make a little set on the head end and put the brake valve on neutral, you know, lap position, and we watch for the brake pipe gauge pointer to go down, gradually go down, that shows as you let the air out of the rear end, that shows we can make the reduction at the rear end, I can also make a reduction clear back to the rear end.

Mr. Mason: In other words, this rear end test which is covered by Rule 24 of the Airbrake Book shows that the train line is connected through and is not obstructed from front to rear of the train.

A. That is the intentions of it.

Q. You referred to the Tucson-Lordsburg district as stormy, and you referred to it also as mountain operation.

A. Pardon me.

Q. Just a minute. I am going to ask you a question. The maximum grade in that territory is 1.4, isn't it?

A. If I understand it correctly, there are two places, one place is 1.48, one place, 1.49.

[fol. 4513] Q. Aren't you familiar with the time-table?

A. Yes, sir, I am familiar with the time-table.

Q. I want to show you something from the time-table which is in evidence here at the request of the counsel for the State, who called you as a witness, and I take it you will accept it as correct, because he put it in evidence. Looking at page 10 of the current Tucson division time-table, No. 112, I will ask you if it doesn't show under the head "Bowie Subdivision, Rule 33," that 1.4 grades are the highest grades on the main line, and they are in the territory between Tucson and Lordsburg?

A. I hate to mention this, but I never thought I would have to say it, but a friend of mine years ago, twelve or fourteen years ago, a civil engineer for the Southern Pacific Company, he is not a friend, he just happened to serve in the army with me, he talked to me one time and told me the different points as to what the grade was. He invited me to come up there and I refused to go.

Mr. Mason: This is all interesting; I didn't expect the hearsay declaration in answer to my question. I move to strike it out as pure hearsay and volunteered.

The Court: The motion is granted. The last statement [fol. 4514] of the witness may be stricken as hearsay.

Mr. Mason: Mr. Kennedy, do you obtain any different rate of pay for the handling of the same type of locomotive between Tucson and Lordsburg than you would obtain if you handled the same type of locomotive between Tucson and Gila?

Mr. Strouss: Objected to as immaterial.

The Court: I don't know the purpose of it.

Mr. Mason: The purpose is to show that there is no mountain differential in so-called mountain territory.

The Court: Objection overruled.

A. No, we get the same rate of pay. I don't believe I mentioned mountains—I mentioned we had four hills.

Mr. Mason: Your counsel mentioned it, and you agreed with it, I believe your counsel said you had mountain operation.

The Court: Well, the record is made, and it speaks for itself. Go ahead.

Mr. Mason: Now: Mr. Kennedy, you have never worked in engine service excepting between Yuma and El Paso?

A. Do you want to know all the districts I have worked in engine service?

[fol. 4515] The Court: Just answer the question, Mr. Kennedy.

A. Yes, I have worked more than between Yuma and El Paso.

Mr. Mason: In engine service?

A. In engine service.

Q. You didn't mention it in giving your qualifications in answer to the question of your counsel. As I got your answer, you started firing on this division?

A. I worked in this division, but I have worked at Globe, Douglas, I have worked on several branch lines, I have worked at Nogales.

Mr. Mason: Now, we will just confine ourselves to main line operation here for a moment.

Mr. Strouss: You didn't ask him as to branch line operation.

Mr. Mason: I don't propose to examine him as to branch line operation. I judge that would be improper.

Q. You don't use retainers in this operation between Tucson and Lordsburg?

A. No, sir.

Q. The use of retainers is characteristic of mountain operation, isn't it?

A. Yes, sir.

[fol. 4516] Q. Now, I take it from an answer to your counsel that the controlling of the train, whether in valley or mountain territory, consists in the largest part of controlling the slack in the train?

A. That is true, that is one of the things.

Q. And the balance of the controlling of the train is the ability to stop it when you want to?

A. To stop it when you want to.

Q. Or slow it down when you want to?

A. Or to slow it down when you want to.

The Court: A lot depends upon the individual skill of the engineer, I take it, Mr. Kennedy?

A. Yes, sir, that is a great deal, the experience of the engineer has a great deal to do with it. Equipment has some to do with it, a good engineer with no equipment couldn't do anything.

Mr. Mason: You have no fault to find with the Southern Pacific Company equipment?

A. No, no.

Q. Now, you were asked if you agreed with this statement, the heavier the engine and the longer the train, the greater is the care required?

A. That is right.

Q. The heavier the engine, Mr. Kennedy, the greater the compensation of the engineer, is it not?

[fol. 4517] A. Yes, sir.

Q. So that the care which you are required to give to your job when the engine is heavier and the train is longer is paid for?

A. Oh, yes, no complaint there.

Q. You don't mean to say, do you, Mr. Kennedy, by your agreement with that statement read to you by counsel as to the greater care required, that you cannot by the exercise of that care control a longer train and a heavier engine?

A. I don't really understand what you are trying to ask me.

Q. Well, you don't mean to state, do you, Mr. Kennedy, that in your experience you cannot in ordinary circumstances control any length of train that you are required to handle in any part of the territory where you hold seniority?

A. What I meant to say was, the larger the engine and the larger the equipment and one thing and another, you understand, it adds more cars, more length, and heading out of these side-tracks or heading into them, you have to use more skill, it is just a little more job.

Q. You have that additional skill and additional care to enable you to do it, don't you?

A. Yes, but you understand if you have a little engine [fol. 4518] and only five cars, you could always keep the slack out.

Q. Well, you are always able to control your trains, aren't you?

A. I do pretty good, but I don't always control them.

Q. Now, within the last twelve months, Mr. Kennedy, you handled from Lordsburg to Tucson on April 16, 1940, a 91-car train?

A. I don't know whether it was 91 or 94, I didn't know.

Q. According to my records you had no occurrences at all of any kind during that trip?

A. No, and I didn't intend to have, either.

[fol. 4519] Mr. Mason:

Q. You handled it I suppose with a 5000 class engine?

A. Yes, sir, it was a 5000.

Q. A few days later on April 25, 1940, you handled a 94-car train from Tucson to Gila?

A. Yes, sir. I don't know the date, but I take it for granted that is correct.

Q. You remember those two trains?

A. Yes, sir, but I don't remember just the date?

Q. You remember that you handled the train from Tucson to Gila without any difficulty?

A. Yes, sir, I remember that.

Q. That includes handling that train on a one per cent grade out of Tucson yard for a little way west, doesn't it?

A. Yes, sir.

Q. And up a 8 or 86 grade from Maricopa to Estrella?

A. Yes.

Q. And down a 1.02 per cent grade from Estrella to Gila?

A. Yes, sir.

Q. You accomplished that without any trouble?

A. Certainly I accomplished it without any trouble and intended to do so.

[fol. 4520] Q. You handled that train I assume with an F type engine, an F-4 or F-5?

A. I had a 5000 on the Tucson-Lordsburg. You must have the record of the engine I had.

Mr. Mason: No, I don't happen to have it.

A. It must have been a 3700.

Q. That would be the F type west of Tucson?

A. I suppose so.

Q. As a matter of fact, throughout your entire career as an engineer on the Tucson division you have never been involved in a slack action casualty in which a trainman or any other person suffered a reportable injury, have you?

A. No, sir, not that I know of. I don't remember of ever having one.

Q. That includes your operation east of Lordsburg as well as west?

A. Yes, sir, anywhere.

Q. On both long trains and short trains?

A. Yes, sir.

Q. Using the word "long trains" to mean trains of more than 70 cars. You have never had any casualty according to the record I have before me, Mr. Kennedy, on any train in which you were engineer because of failure to see or understand a signal whether passed from rear to front [fol. 4521] or otherwise?

A. No, sir, I have had no trouble.

Q. That would apply also to long trains as well as short ones?

A. You understand the long train, I handled that more carefully and you understand a signal on a long train, I make the brakeman get up on the top somewhere to get the signal. When I get the signal from him that is satisfactory as far as I am concerned.

Mr. Mason: I think that is all, thank you, Mr. Kennedy.

Redirect examination.

By Mr. Strouss:

Q. Mr. Kennedy, you were asked about your work between Lordsburg and El Paso. In operating over there what have you found with respect to the braking conditions in that territory?

A. Well, you know that is a hotbox country and you avoid applying the air if possible. That is more or less a steam job.

Q. Is it a territory where it is necessary to use the air to any extent?

A. It is possible that you can come from El Paso to Lordsburg and never set the air. It can be done. You are [fol. 4522] talking about train brakes now?

Q. Yes, I am talking about train brakes.

A. You are not talking about engine brakes?

Q. No. This train that you handled of 91 cars I believe counsel said from Lordsburg to Tuneson, did you say you had no difficulty with that?

A. Pardon me, that didn't come from Lordsburg, I picked that up at Bowie. We had the slack run in but i didn't injure anybody.

Q. How about your brakes on the rear end of that train?

A. The rear part of the train was floating.

Q. By "floating" you mean the brakes were not applied?

A. The brakes didn't apply. I made about a seven point set and barely they came in. I couldn't make a heavy set, it would hit them too hard.

Mr. Strauss: That is all.

Recross-examination.

By Mr. Mason:

Q. You didn't report any difficulties with that train?

A. No, sir.

Q. You had no trouble whatever in handling it?

[fol. 4523] A. No, sir, I didn't intend to have.

Q. No brakeman or conductor or other person in the caboose was injured?

A. No, sir, and I hope I don't ever injure any one of them, I don't want to.

~~Mr. Mason: That is a very commendable record, Mr. Kennedy, thank you.~~

(Witness excused.)

The Court: Do you want Mr. Durnil?

Mr. Mason: No, not at this time.

(Discussion off the record.)

The Court: We will recess then at this time and the only matter then will be the cross-examination of Mr. Cooper.

Mr. Mason: Yes.

The Court: The court will be at recess until ten o'clock tomorrow morning.

(Thereupon the court stood at recess until 10:00 a. m. April 12, 1941.)

[fol. 4524]

10 P. M., April 12, 1941.

All parties being present as heretofore noted, proceedings were resumed as follows:

The Court: You may proceed. Come forward, Mr. Cooper, for cross-examination.

TRACE H. COOPER resumed the witness stand.

Cross-examination.

By Mr. Mason:

Q. Mr. Cooper, you have been in active service at Needles and on the Arizona division of the Santa Fe as an engineer since 1916, I think you said?

A. 1916 as an engineer.

Q. You stand pretty high in seniority as an engineer on the Arizona division, don't you?

A. Well, I am in freight service, yes. I am near the top. There are some seven or eight men senior to me in freight service over there at the present time.

Q. You have actually run in passenger service at some time, haven't you?

A. I have caught passenger trains but not a great deal. [fol. 4525] Q. Your seniority as an engineer enables you to have a certain amount of choice as to the kind of job you will work and the place or locality where you will work, doesn't it?

A. That is in freight service, yes.

Q. That is what I mean.

A. Yes.

Q. Your seniority district, as I understand it, extends from Seligman on the east through Needles and Barstow and down to Bakersfield on the west?

A. Yes, sir.

Q. Subject to the right of men who may stand senior to you, you can have the choice of any job that may be open anywhere between Seligman and Bakersfield?

A. Yes, it is all one seniority district.

Q. That is what you mean, what any of us in the railroad business mean when we say that you exercise seniority choice to bid for a position in the service?

A. Yes, sir.

Q. So that you can have any job in engine service, subject of course to the rights of the men ahead of you, anywhere in that entire territory?

[fol. 4526] A. Yes, sir.

Q. You say that you are only a few places out from holding a passenger job now?

A. That is out of Needles, on either the first or second district out of Needles, probably about eighth I guess from a passenger assignment.

Q. That means in a practical sense that you can hold any freight assignment that may be open anywhere between Seligman and Bakersfield?

A. Well, mostly, yes. That doesn't include the Parker locals between Barstow and Parker. They are preferred and men who hold those runs are far in the clear in passenger service.

Q. As to main line freight service, you can hold almost anything that you might want to bid for?

A. Yes, in a pool service.

Q. I take it that this run that you hold now, the cut out pool out of Needles westward, is more or less a preferred assignment?

A. It is among the freight runs, yes.

Q. Did you say that the present length of the trains you are handling in the territory west of Needles runs higher than 70 cars generally?

A. No, not at the present time.

Q. You have trains of considerably more than 70 cars [fol. 4527] eastward from time to time, don't you?

A. Oh, yes.

Q. And westward, don't you handle long trains?

A. Occasionally, but they are not a standard thing now. In fact we have handled more short trains lately than we have ever handled before.

Q. What type of locomotive are you using generally?

A. We are using a 3800 and 3900 class engine. We have a small engine, too, a 3100.

Q. What is the wheel arrangement of the 3800?

A. 1-10-1, five drivers, pony truck and trailer.

Q. You mean it is a 2-10-2?

A. Yes.

Q. What is known as the Santa Fe type?

A. Yes.

Q. What is the tractive effort?

A. Oh, goodness, I don't know. I haven't any figures on that.

Q. Did I understand you to say that these locomotives are frequently inspected by representatives of the Interstate Commerce Commission?

A. Surely they are, yes.

Q. That inspection includes, of course, the inspection of the brake equipment as well as the balance of the locomotive, doesn't it?

A. I believe it does. They go over them pretty thoroughly when they come out, those inspectors.

Q. The territory east of Needles, between Needles and Seligman, Mr. Cooper, you have operated in that territory, have you?

A. Yes, sir.

Q. That is all short train territory, using the words "short train" to mean a train of 70 cars or less?

A. 70 cars, yes.

Q. Whereas the territory west of Needles is unrestricted as to train length, isn't it?

A. Yes, sir.

Q. In your present job, Mr. Cooper, you run west out of Needles in double-header service, do you?

A. Yes, sir.

Q. As far as Ash Hill?

A. Sometimes a station known as Pisgah, some twelve or fifteen miles further west.

Q. Your service is in the nature of helper service for the westward trains, isn't it?

A. Yes, sir.

Q. Then you turn around at Ash Hill generally?

[fol. 4529] A. Yes, sir.

Q. And run east double headed on the eastward trains?

A. At times, but we help quite a few trains east again between Cadiz and Goffs, a distance of 39 miles.

Q. That is against a one per cent grade between Cadiz and Goffs?

A. Yes, sir, one per cent.

Q. Did I understand you to say a few moments ago that it is the eastward trains that exceed 70 cars when you handle them?

A. I wouldn't say that they exceeded, some of them do and some of them don't.

Q. They run as high as 85 and 90 cars, don't they?

A. Yes, they do.

Q. When you are attached to one of these eastward trains you are the lead locomotive, are you?

A. Yes, sir.

Q. As the engineer of the lead locomotive, you are in control of the train?

A. Yes, sir.

Q. You control this train from your lead locomotive down a grade between Ash Hill and the foot of the hill [fol. 4530] at Amboy of 2.3 per cent, don't you?

A. No, I don't couple into the train at Ash Hill. When I am helping a train east, I get them at Cadiz, I couple into them at Cadiz and help them up to the top of the hill.

Q. You don't couple in at Ash Hill on an eastward train?

A. No, we will run light as a rule from Ash Hill to Cadiz.

Q. After you have coupled into a train at Cadiz and helped it to Goffs, do you continue in that train to Needles?

A. No, we did years ago but that has been discontinued.

Q. You run light again, do you, from Goffs back to the terminal at Needles?

A. Yes, sir.

[fol. 4531] Q. Then you don't in your present job handle any of these eastward trains down grade?

A. No, I don't handle any of them at the present time.

The Court: Is the braking power increased when you have a double-header, two engines on?

A. Yes, sir; the object of using one engine is that it puts so much weight on the head end of the train where you are braking it automatically that it causes bad slack action at times, too much weight in the front end, it runs away from the train or into it either way.

Mr. Strauss: I don't believe the witness understood your question.

Mr. Mason: I was going to ask the same question.

The Court: Go ahead.

Mr. Mason: When you have two locomotives on the train, does that give you more air-reservoir capacity at the head end?

A. No, that doesn't unless we ask for it. It is there in case we need it, that reservoir capacity, but the lead engine—

Q. The second locomotive isn't cut in then?

A. He isn't cut in for that purpose, no, he is just like a box-car in a train.

[fol. 4532] Q. The brakes on the second locomotive are actuated from the engineer's brake valve in the lead engine in the same way as if it were another car?

A. Yes, sir.

Q. All the second engine does then is to furnish additional power going against a grade?

A. Yes.

Q. But no additional braking power going down hill by reason of its additional air reservoir?

A. No. May I just explain this. In case we should need it, if I am running short of air, or something, my compressor isn't up to standard and I need it, we have whistle signals to call his attention to it and we can ask him to cut in and help us.

Q. And that is done very simply by the turn of a valve in the cab of the second engine?

A. The cutoff cock underneath the automatic brake valve.

Q. Now, you spoke in your testimony of the K type triple valve which took place in 1913, which you say was an improvement. There have been numerous other improvements in the triple valves on the freight cars since 1913, haven't there, Mr. Cooper?

[fol. 4533] A. On the freight cars?

Q. Yes, and the brake equipment generally?

A. Why, no, there hasn't been any improvements on the K since the quick service and the retard release uniform discharge.

Q. Hasn't there been the addition of the heavy graduating spring?

A. Oh, that was a feature.

Q. You spoke of that in your testimony.

A. Yes, that came out about 1925.

Q. That was a very substantial improvement, wasn't it?

A. Why, one of the most wonderful things they ever put in the valve, yes.

Q. In addition to that, Mr. Cooper, haven't you in your experience found that the hose connections are very much better nowadays than they were twenty years ago?

A. Oh, yes, we have had improvements of that kind in there, and the equipment, I guess, is put together stronger, you might say that.

Q. Now, in addition to these improvements on the cars, don't you consider that the addition of larger reservoirs on the engines is an improvement in the braking equipment?

A. Well, I don't know those large reservoirs you spoke [fol. 4534] about, our reservoirs are the same size they have always been.

Q. Well, with the increased size of the locomotives, haven't they increased the size of the reservoirs?

A. Well, we haven't changed our locomotives.

Q. Not in the 25 years?

A. Oh, yes, we have in 25 years, but since the K came out, I guess our present locomotives came there a short while after that, probably three or four years.

Q. You have had increases in the size of your locomotives since 1913, haven't you?

A. Yes, the present locomotive of 38 and 3900, 2-10-2 type, and the others were the same engines, but smaller, they were 2-10-2, but smaller than our present locomotives, they were nine and sixteen, hundreds.

Q. That is the numerical class, that is all?

A. Yes.

Q. Don't you consider that the double compressors that you have, is an improvement over the single compressor that used to be attached to the locomotives?

A. We don't have that.

Q. Don't you have double compressors on your locomotives? [fol. 4535]

A. No, we are using single compressors.

Q. What brake equipment do you have?

A. Westinghouse.

Q. What is the numerical style of it? Are you familiar with the 6-E. T. equipment?

A. Yes, sir.

Q. With the 8-E. T.?

A. Yes, that is what we have on these engines, No. 8.

Q. Isn't that an improvement over what you used to have, a great deal?

A. They have on the engines, the engine brake itself, there is a slight improvement in that, in the distributing valve, but the other is just the same, the reservoir capacity is all the same.

Q. By the way, Mr. Cooper, how long have you been operating the cut-out pool from Needles westward to Ash Hill?

A. Well, this last time I have been on one of those turns about four months, I guess, something like that, that is a guess, five months possibly.

Q. Is that an assignment that you have occupied a great deal during the last several years?

A. Yes, I have been on that assignment three or four [fol. 4536] different times in the past four or five years.

Q. On that assignment you have considerable time to attend to your duties as local chairman of the Brotherhood of Locomotive Engineers, don't you?

A: That is my purpose in staying on it, it keeps me at home, I am home every day on that assignment, practically so.

Q. Mr. Cooper, there was read to you an excerpt from the Southern Pacific Airbrake Book to the effect that the heavier the engine and the longer the train the greater the care required, and you were asked if that were true, and you agreed with it?

A. Yes, sir.

Q. I take it that you agree then, that the handling of a longer train with a larger locomotive simply requires greater care on the part of the engineer?

A. Yes, sir.

Q. But it is possible, with the exercise of that care, to achieve that control, is it not?

A. Well, not at all times. You do your best all the time.

Q. You wouldn't be willing to say, with your experience and your knowledge and qualifications, that you can't control any train that is handed to you?

A. That is, if I get your question right, that I can't control the train. The purpose of that is to control it properly. I would probably stop the train, yes, I didn't say I couldn't stop it, I say, I oftentimes get hold of trains where you cannot control them properly. That is, the slack, no matter how hard you try. Occasionally you get hold of one of them you are going to rough, you can comply with all the rules you know of, or all the methods you know of, and you are absolutely unable to control it properly.

Q. Do you believe, with the present methods of operation and the present type of airbrakes, and with the other locomotives appropriate to the size of the train, that you are not able to control and stop trains that are given to you?

A. Oh, I can stop it, I didn't say I couldn't stop it; it is how I stop it.

Q. And control it?

A. I can't control slack in all of them, no.

Q. You are a skillful engineer, of course?

A. Well, I try to be.

Q. And when you have a longer, heavier train, you apply your skill to its control, don't you?

[fol. 4538] A. Every bit of it that I have got.

Q. Have you any specific instance within the last—well, any specific instance at all, any specific date and train that you can tell us about when you were unable to handle and

control a train either of 70 cars or less, or more than 70 cars, and as a result had any slack action resulting in a reportable casualty to anybody?

A. I haven't brought any dates of those with me, Mr. Mason, but I have had the thing happen to me a number of different times, I cannot give the dates.

Q. You remember if you had such a serious lack of control as to result in an injury to anybody that took him out of his job for more than three days?

A. No, I haven't injured anyone that I know of personally, but you wouldn't want me to tell you about some I have seen, would you?

Q. I didn't ask you about any you have seen, but I assume that you are prepared with dates and names and extent of injury, and so forth?

A. Not of my own personal knowledge, no.

Q. You haven't any personal knowledge?

A. No, I haven't brought any of that stuff with me, and I kept no record of trains of that kind, but I can tell you [fol. 4539] about them if you want to know.

Q. You cannot tell us about them of your own personal knowledge?

A. No, but where I have been implicated in different cases of the men, representing the men on it, but I have had none personally.

Q. You referred to this 160-car train on the Chesapeake and Ohio, a photograph of which was shown you, Exhibit 118?

A. Yes, sir.

Q. You are very familiar with operations on the Chesapeake and Ohio, are you?

A. No, I am not.

Q. You don't know then whether the Chesapeake and Ohio engineers have any difficulties in handling those trains?

A. No, I don't know anything about that.

Q. You don't know whether the handling of those trains results in slack action casualties to the trainmen?

A. No, I don't know anything about that; I haven't checked up on that, but I would like to see them take one of them down these mountains.

Q. You don't know what the grades may be on the main lines of the Chesapeake and Ohio?

[fol. 4540] A. No.

Q. You don't know that those grades run in excess of one-and-a-half per cent?

A. No, I don't know that.

Q. You spoke of the use of the conductor's valve, Mr. Cooper. Have you been on the engine when the conductor's valve was used in the rear of the train to stop in emergency?

A. Yes, numerous times.

Q. Has it ever resulted in your being injured personally?

A. No, not personally.

Q. Has it resulted in the injury of anybody in the cab of the engine?

A. No, no.

Q. Has it resulted in the injury—I mean by injury, a reportable injury.

A. No, no.

Q. A reportable injury is an injury involving more than three days' disability to an employee on duty?

A. Yes.

Q. You haven't seen the use of the conductor's valve result in any reportable injury?

A. No. That is, to persons.

Q. Yes. Now, I think you have said in part of your testimony [fol. 4541] many that a rule which was read to you from the Southern Pacific Book of Rules was practically standard. I take it, that the Airbrake rules are also practically standard?

A. Yes, they run pretty close together, they may be worded a little bit different, but the meaning of the rule seems to run right along with the rules in the Santa Fe green book, they run parallel.

Q. You had considerable discussion of slack, Mr. Cooper. Now, I take it by slack you refer to the motion which is built into freight cars for the purpose of assisting in the operation of the train; is that correct?

A. Yes, sir.

Q. And that includes this free motion at the coupler face, does it not?

A. Yes, sir.

Q. About seven-eighths of an inch, is that right?

A. Yes, it takes in all the slack.

Q. And includes also whatever motion there may be in the remainder of the draft rigging?

A. Yes, sir.

Q. You are familiar with the draft rigging on freight cars?

[fol. 4542] A. Well, not too familiar, it is a little bit out of my line; I know what they are.

Q. You know that the coupler shank is attached to the body of the car by means of a draft gear, don't you?

A. Yes, sir, I know that.

Q. And that in the draft gear there are certain springs and friction members which permit a certain amount of motion against resistance?

A. Yes, sir.

Q. And you refer to that motion as a part of the slack built in to the car?

A. I do.

Q. Now, that slack is necessary for train operation, is it not?

A. Yes, sir, as I see it.

Q. It assists you in starting a train, doesn't it?

A. Yes; lots of times we couldn't start at all if we didn't have the slack to start off.

Q. It is essential where you have a train to start the cars one at a time?

A. Yes, sir.

Q. The fact that there is this motion between the coupled cars permits you to do that?

A. Yes, sir.

[fol. 4543] Q. Where your engine couldn't start a solid train all at once against a grade, or even on the level perhaps?

A. Well, it could if it wasn't so heavy. In other words, if we didn't have any slack in there you couldn't overload them, they would have to put something on there they could start with.

Q. Well, the slack permits you to handle a train which the engine can haul once it is in motion, but which it couldn't start from a ~~standstill against~~ a grade?

A. Yes, I believe that.

Q. Now, slack is also useful in that it enables the train to pass around curves, does it not?

A. It has to have it.

Q. And it has to have slack in order to enable the train to pass over little dips and humps, doesn't it?

A. Yes.

Q. There has to be this motion between cars in order to adjust to the irregularities of the roadbed?

A. Yes, it is necessary.

[fol. 4544] Q. Do you know how much pulling force it requires or how much striking force it requires in order to produce the maximum amount of motion of which a friction draft gear is capable?

A. No, I haven't a chart on anything such as that. I have seen it registered on a dynamometer car but I don't know.

Q. You make a difference, don't you, between slack on the one hand which is the motion or possible motion which is in the cars and built there and the slack action on the other hand, don't you?

A. Make a distinction between them?

Q. Yes, isn't slack action simply the result of the slack as the result is developed in train operation?

A. I don't get that question at all. Slack is slack with me.

Q. Yes, I know, but the slack is always there, isn't it?

A. Always.

Q. But slack action doesn't always take place, does it?

A. Not if you have it controlled.

Q. Slack action does not take place at all when the train is standing, does it?

[fol. 4545] A. No.

Q. But the slack is there?

A. The slack is there, yes.

Q. Isn't a correct definition of slack action, "The accumulated effect of the possible motion defined as slack as such effect may be created or brought into play as a result of train operation"?

A. Yes, you don't notice any slack when the train is standing.

Q. It is only the train operation that creates slack action?

A. Yes, it is while you are moving.

Q. The subject of grade crossing collisions, Mr. Cooper, I understand that you have comparatively few grade crossings in the territory between Needles and Ash Hill or Pisgah where there is any substantial hazard of grade crossing collision?

A. We only have four principal highway crossings in that run.

Q. When you approach a grade crossing, when you are running along in charge of a train, do you approach it prepared to stop?

A. A grade crossing?

Q. Yes.

A. That depends on where we are. If we are in yard [fol. 4546] limits we are supposed to.

Q. I mean where you are running along in the open country?

A. No.

Q. Where you approach a grade crossing within yard limits you are controlled by the rules applying to all yard limits?

A. Yes.

Q. The grade crossing doesn't add anything to the fact that you keep your train under control prepared to stop within yard limits?

A. No, but you have to keep your eyes open pretty carefully.

Q. Suppose you were approaching a grade crossing in open country, outside of the yard limits, and you saw an automobile or some other motor vehicle approaching the grade crossing or adjacent to a grade crossing in a position where he can go on the grade crossing before you get there?

A. You mean racing with me for the crossing?

Q. Not necessarily racing, but rolling up to the crossing or perhaps standing there as you approach the crossing. That happens all the time.

A. Where he is standing there it is all right, but I have gone after them pretty hard on numerous occasions where I have these sillies racing with me for it.

[fol. 4547] Q. Where they are racing with you for the crossing, do you slow down prepared to stop short of the crossing?

A. I always do, I always get the air on if I see a fellow pulling that.

Q. You let him have the grade crossing ahead of you?

A. I don't want to hit him.

Q. Of course not, but do you slow down for every crossing in that way?

A. No, no, I just say where I see some silly racing for the crossing.

Q. Normally, except for those people, who may be racing with you, you go up to the grade crossing at full speed?

A. Normal speed, yes, if I have the right of way, sure.

Q. Suppose that somebody gets on that grade crossing just in front of you, can you with the emergency stop in time to avoid an accident if you are approaching at full speed?

A. No, not at all times, no. It might help, you might get stopped and you might not, but in the case of life or property like that we are permitted to use the emergency.

[fol. 4548] Q. As a matter of fact, you couldn't stop in time to avoid a collision with an automobile driven on the track right in front of you even if you were running a light engine?

A. Not if you run right up in front of me, no.

Q. The length of the train does not make any difference about your ability to avoid a collision with the automobile, whether it be a light engine or a 10-car train or a 150-car train, does it? Your locomotive will still hit that automobile if it is driven on the track in front of you?

A. If he drives right up in front of me, yes, but there are times when we have a train like that and we try to stop to avoid it and that is where we wreck a train lots of times making these unknown stops where we don't know it in advance.

Q. Have you made any tests of the distance within which you can bring a freight train to a stop?

A. Not any personal tests, no.

Q. You haven't made any tests of the distance according to the weight of the train or the size of the locomotive.

A. No, I haven't made any tests on it.

Mr. Mason: I think that is all, thank you, Mr. Cooper.

[fol. 4549] Mr. Strouss: That is all, Mr. Cooper.

The Witness: Thank you.

The Court: Do I understand that we have no other witnesses?

Mr. Strouss: No, your Honor, I haven't any. The time that has been required for putting on the evidence has gone considerably faster than I had anticipated. I will not have any delay from now on as I will have witnesses here at all times.

The Court: Gentlemen, it is also understood, I take it, that we reconvene on Monday?

Mr. Strouss: Yes.

The Court: Then the court will be at recess until Monday morning, April 14th, 1941, at 10 A. M.

(Thereupon the court stood at recess until 10 A. M., April 14, 1941.)

[fol. 4550] 10 A. M., April 14, 1941

All parties being present as heretofore noted, proceedings were resumed as follows:

The Court: You may proceed.

CHARLES E. STEVENSON was called as a witness in behalf of the plaintiff and being first duly sworn testified as follows:

Direct examination.

By Mr. Strouss:

Q. Will you state your name?

A. Charles E. Stevenson.

Q. Where do you reside?

A. El Paso, Texas.

Q. What is your business?

A. Locomotive engineer.

Q. You are employed by the Southern Pacific?

A. Yes, sir.

Q. How long have you been in railroad service?

A. I worked in the shop from October, 1906, until March, 1908. I started firing on September 18, 1909. I was promoted July 4, 1916, and have been in continuous service ever since.

Q. Over what territory have you operated engines as an engineer?

[fol. 4551] A. All the territory between Yuma and El Paso, north line.

Q. Have you worked on the south line?

A. I fired four trips between Tucson and El Paso.

Q. Where are you working now?

A. That also includes Yuma to Phoenix and Phoenix to Tucson.

Q. In other words, you have worked on all—

A. On all Southern Pacific property, Tucson and Rio Grande divisions between El Paso and Yuma.

Q. That is the main line?

A. Main line.

Q. You are working where now?

A. Between El Paso and Lordsburg.

Q. Have you an assigned run there?

A. Yes.

Q. Are you working in freight or passenger service?

A. Freight.

Q. Have you worked in passenger service?

A. An occasional trip.

Q. What length trains have you operated?

A. Almost any length train up to 100 cars. I have operated one train of 126 cars.

Q. How long have you been working in that Lordsburg [fol. 4552] El Paso territory?

A. I worked a few months in 1932, a few months in 1934, and I went back in December, 1934, and have been there continuously since.

Q. Will you, just in a general way, give the duties of a locomotive engineer?

A. After being called, I arrive at the roundhouse, register out time due to leave, compare your watch, look over the bulletin book, proceed to the engine, examine the water glass gauges and gauge cocks, turn on the air pump if not already on, see that you have the proper pressure in your gauges, proceed to oil around, observing drivers and rods and different parts of the locomotive for any possible defect before making the trip. You proceed to the yard where the herder takes charge of you, puts you on the train, make a yard test prescribed by the rules. After the test is over, the conductor is there with the orders and if everything is set we proceed on our trip.

Q. On your trip you have duties?

A. Leaving town we watch out for street crossings and for signals and any obstructions on the track. When we are out we observe the running gear of the train, particularly on curves and every opportunity.

[fol. 4553] Q. As an engineer on the Southern Pacific, are you required to have a knowledge of the brake equipment and its operation?

A. Yes.

Q. Are you given an examination on that?

A. When we are promoted we take a mechanical examination and also on the transportation book of rules.

Q. In operating and handling a train, are their peculiar difficulties that you meet in handling a train? I have in mind the matter of controlling slack in a train, is that one of the difficulties?

A. Yes, we experience a good deal of difficulty in this location of controlling the slack due to the uneven rolling country. We have a great many hogbacks a number of different places on our line.

Q. In any of the territory has the controlling of slack anything to do with the smooth handling of the trains?

A. It has everything to do with it.

Q. Exhibit No. 319, Southern Pacific Company (Pacific Lines) Air Brake Rules and Regulations, reading from page 8, "Smooth train handling depends on the ability to control the slack and how to prevent it from running in or out harshly." Have you found that to be the rule?

[fol. 4554] A. Yes.

Q. (Reading) "Where so controlled, no draft gear in fair to good condition will be damaged. Slack action cannot be prevented, but by acquiring knowledge of the various cause for it, and exercising forethought in the use of steam, train brakes, independent engine brake and sand, it can be controlled, even to the extent of avoiding further injury to damaged draft gear." Have you found that to be true in your experience as an engineer?

A. Yes, very much so.

Q. Can you always control the slack in a train?

A. No, not with the long trains, we are unable to control it. We can do a fair job of attempting to control it, but on the long trains it simply cannot be done.

Q. (Reading) "The heavier the engine and the longer the train the greater is the care required," you have found that to be true?

A. Yes.

Q. Again reading, "With high pressures and large main reservoirs it is very easy to overcharge the head end of the train; many detrimental effects result, such as stuck brakes, flat and broken wheels." Have you found that to be true? [fol. 4555] A. I have found that to be the case, more particularly on the long trains than on the shorter trains.

Q. (Reading) "Many are of the impression that because the brake pipe gauge shows higher than the auxiliary reservoir pressure is intended to be, that all brakes are released;

as a matter of fact, this is a condition that exists only on the first few cars in the train, the pressure at the rear not having sufficiently increased to release the brakes. In fact, 25 cars back from the engine it cannot be determined whether the brake valve handle is in release or running position." Have you found that to be true in your experience?

A. Yes.

Q: Reading from page 11 of exhibit No. 319, "An automatic brake application will cause the brake pipe pressure to reduce faster at the head end of train than at rear. This results in the head brakes applying in advance of those at the rear, and tends to bunch the train and compress the draft gears." Have you found that to be true?

A. Yes.

Q. (Reading) "In releasing, the head brakes commence so much before those at the rear that, as far as holding power is concerned, they are practically off before the rear [fol. 4556] ones start to release, causing the slack to run out rapidly. Just how serious the result may be largely depends on how heavily they are applied, the amount the draft gears are compressed, and how slowly the train is moving." Have you found that to be true in your experience?

A. Yes.

[fol. 4557] Q. Now, in mountain or grade operation, is there anything peculiar to the controlling of slack on mountains and grades; is there any peculiar difficulty there?

A. Yes, we find that on grades, that braking, where you have to make repeated applications, that often times there is insufficient time in between these reductions to recharge the rear end of this train, and you are unable to apply those brakes on the rear end of a long train because of the insufficient time between reductions. The train will increase in speed after releasing and before you have had time to recharge that rear end you are required to apply the air again, and you are naturally going to get a surge, a run-in and run-out.

Q. What is the effect upon the time required to recharge your brake pipe; what is the effect of the increase in length of train upon your ability to recharge your brake pipe line?

A. Well, as the brake pipe increases in length, it takes that much longer to recharge those brakes at the rear end.

Q. Is that also true in making a reduction of the air?

A. The same thing. They apply much slower the further [fol. 4558] away from the brake valve; naturally, it is much slower to apply that brake.

Q. Reading from Exhibit 319, page 29, Rule 18: "Light Grade Braking: When descending light grades, particularly when retaining valves are not used, build up the braking power by making light brake pipe reductions consistent with grade, speed and weight of train, spacing the reductions so as to have the brake application as heavy as permissible without exceeding a full service by the time a release is necessary or desirable. Heavy Grade Braking: The one-application method must be employed when descending grades and using retaining valves. The engineer must charge the brake system to standard pressure before leaving summit of grade, then after leaving, make one or more brake pipe reductions and permit train to attain the desired speed. After this has been accomplished, pressure on the gage must be observed and the brakes released. The brake valve handle must be left in release until the pressure is restored before returning it to running position. Just before the train begins to gain speed, one reduction must be made, bringing it down to where it was immediately before releasing." Is that the method of braking that you use?

[fol. 4559]. A. Yes, sir.

Q. Is that what is known as the short cycle method?

A. Yes, sir.

Q. Do you know what is the long cycle or long hold method?

A. Yes, it is making a light application and allowing a train to ride for a longer time before coming to a stop.

Q. Are there any dangers connected with that?

A. Yes; the long hold method has a tendency to heat wheels and naturally to cause flat spots which are later picked up.

Q. This short cycle method, that is the method you were speaking about in stating the difficulties in connection with grade braking?

A. Yes.

Q. And if I understand you correctly, you state that the difficulty there is that when you first grab a train and release, and then you have to grab it again, because of its increase in speed you have to grab again before you have time to recharge your train, how does the length of the train affect that?

A. The length of the train would affect your grade braking [fol. 4560], because you have insufficient time to fully recharge the brakes before you would have to re-apply the brakes to control the speed.

Q. Now, is it because of the longer time?

A. The longer time required to recharge the rear end of a long train.

Q. You have operated engines on trains, you have stated, in Arizona; that is, between Lordsburg and Yuma, both through Gila and through Phoenix?

A. Yes.

Q. Is there any territory in Arizona where that type of braking would be necessary?

A. Yes, we have a number of places between Tucson and Lordsburg, out of Steins, New Mexico, and Dragoon, Arizona, Mescal, Arizona, where this type of braking is required.

Q. Now, in the territory that you are working at the present time, is it necessary to use the brakes to any great extent?

A. Yes, going east on trains we use the air as many as, well, as little as six times, and even more, that is just for regular stopping and grade braking.

Q. Between Lordsburg and El Paso?

A. Between Lordsburg and El Paso.

Q. But is that a territory where you would have grades [fol. 4561] which would require frequent application of brakes?

A. No.

Q. And what about coming west?

A. Westbound we are able to handle 100 cars very frequently over the entire district without using the automatic brakes at all.

Q. You know, of course, what retainers are?

A. Yes.

Q. Have you operated trains where the retainers were being used?

A. Yes, years ago I have used retainers.

The Court: Are those retainers used any where between El Paso and Yuma, in your experience?

A. Not in the last few years.

Mr. Strouss: Referring to Exhibit 175 in evidence, page 10, Rio Grande Division timetable, under the heading

"Freight and Mixed Trains, Air Brake Rules: The conductor and engineer, after consulting may use necessary retainers on trains of less than 100 M's per operative brake, when such train has loads on head end or when it is necessary to adjust slack." Then again reading: "Sufficient retainers will be used on westward trains between Planeport and El Paso to adjust slack." Now, retainers are sometimes used to adjust slack?

[fol. 4562] A. In the judgment of the engineer and the conductor, you can use the retainers to adjust slack on long trains.

Q. Would the length of the train, assuming a territory such as you have described, where short cycle braking is necessary, and you have stated it is because of the length of the train, your ability to get the air back to the rear end is affected, would the increase in the length of the train have any effect upon the necessity to use retainers for the purpose of adjusting the slack?

A. Yes, they would assist in holding the head end of the train during the period of release to give you a little more time to try to recharge this rear end. That is the idea of the retainers, to assist in holding while release and recharging is in operation.

Q. Now, you testified that one of your duties is to observe your train while in motion?

A. Yes, sir.

Q. What is the purpose of that?

A. Well, if there is any brakes sticking or if dust is kicking up in any particular place, it is an indication a brake beam might be dragging or some brake rigging; if it is smoke, either hot wheels or a hotbox, and we try to be alert [fol. 4563] and look back at every opportunity to detect those defects.

Q. What effect, if any, does the increase in the length of the train have upon your ability?

A. The length of the train has a great deal to do with it, because you can only see a reasonable distance back. The longer the train the more obscure the view would become.

Q. Have you recently, or within the last two or three years, had an experience which would illustrate the difficulty in observing defects?

A. Yes, I had an experience here several years ago on a hundred-car train about four A. M. on straight track between Gage and Quincy, in looking back I noticed a peculiar

light that attracted my attention. The right-of-way fence posts, there was a glare that came to every post, I got to watching it, every post, it wasn't as strong as the flashlight, there was enough light to light the post, so I told the brakeman about it, and he got on the step and hung out as far as possible and said he couldn't see it. I slowed down, and dropped him off, and he got back to this locality, which turned out to be about 40 cars, he swung me down, I stopped, the train crew from the rear end walked up, I didn't then [fol. 4564] know what was the matter, they made a cut and took this head end to Quincy. When I came back I picked up the conductor and he said, "We have a hotbox back there, it is so hot I am afraid to move that car with this cut." We went back and got this one car, we poured hot water on it, more preferably than cold, and this box was a white heat, set it out on a spur at Quincy, then returned and got the other portion. We had to put the rear portion of our train in the siding at Quincy and take the head end about three-and-a-half miles further to Wilna, we had to make this move in order to clear up the main line for a number of eastbound trains, No. 2 and several freight trains. When we left Deming we had sufficient time to make Separ, which was a hundred-car siding. The length of it, being so far back and being a type of hotbox that it was—there was no possible chance for us to observe from the engine, if it hadn't been for this light on the fence, I doubt if any of us would have seen it in a case of this kind, the lids on these boxes are dustproof so, naturally, when they get hot and catch fire, the fire will burn up the waste and toward the back, and the fire will come out against the wheel, so the wheel is about [fol. 4565] two-and-a-half feet in toward the track from the outside of the car, so it would be an impossibility for us to see a thing of that nature from the head end.

Q. Now, is there a danger that results from the failure—

Mr. Booth: We object to that as asking the witness for an expression of opinion.

Mr. Strouss: Well, from your experience, do you know what may be the results or what are the results of failure to discover these hot journals?

A. Oh, yes, it wouldn't have taken much longer until it would have broken or burned off.

Q. What happened to the car then?

A. It generally lets the car down, and oftentimes derailment.

Q. Now, in operating a freight train, is it ever necessary for the train crew on the rear of the train to communicate with the head end?

A. Yes, they observe the side of the train the same as we do. If they see anything wrong they attempt to get a signal to us.

Q. How do they signal?

A. In the daytime it is rather difficult to get a signal.

Q. What method is used?

A. If they cannot get a signal to us, they use the conductor's valve in the caboose.

Q. How do they give a signal in the daytime?

A. Well, by getting up on top of the caboose, although that is rather dangerous, if we should stop short we would knock them off of there. They hang out at the side and wave, or at night-time they use a red fusee.

Q. How does the length of the train affect the ability to give these signals?

A. Well, the longer the train, it is just that much further away from you.

Q. In operating these long trains in the territory you are now working, have you experienced any difficulties in receiving signals?

A. Oh, yes, lots of times. I have had the air applied on me many times and been told afterwards that they had been trying to get me to stop for some time.

Q. And when the conductor or a trainman on the rear of the train signals you and you don't get the signal, what do they do then?

A. They use the conductor's valve.

Q. That is when they pull the air on you?

A. Yes, sir, the expression "pulling the air on you." I had that experience at Lanark on a 97-car train, we had [fol. 4567] stopped there for inspection. After calling the flag in, one of the men had walked up the north side of the train and crossed over possibly 50 cars from the engine. By that time the flagman had come in and this man 50 cars from the engine gave us a signal to proceed. I pulled out slowly, giving him a chance to inspect that part of the train and get on. He got near what seemed the rear end of the train, we saw the man get on, it was assumed he gave us a signal, if he gave us a signal we didn't see it, we hadn't

proceeded more than twenty or twenty-five cars until we felt the train begin to settle down. He had pulled the air. In pulling by a few cars ahead of the caboose he discovered a brake-beam down on the south side, wasn't noticeable to him going up the north side. If we had seen the signal we could probably have stopped and avoided using the conductor's valve.

[fol. 4568] Q. Is there a danger in using the conductor's valve?

A. Yes.

Mr. Booth: That is asking for his expression of an opinion.

Mr. Mason: Furthermore, the witness is not qualified.

The Court: The objection is overruled, he may answer.

A. I have had experience where a conductor or one member of the train crew pulled the air and broke the train in two. I had that happen at Wilna. We had stopped and set some cars out there and after calling in the flag and getting the signal to proceed we pulled out and had gone possibly 50 car lengths when the train parted, broken knuckle. After we coupled up and arrived in Lordsburg I found out the conductor had walked up beside the train with a flashlight. He was so far from the head end that nobody saw him. He hollered at the rear brakeman as he went by, we were then pulling out and he said he couldn't get on in the dark. In that particular case he broke the train in two in applying the conductor's valve.

Mr. Strouss:

Q. You were talking about slack action. Is there any [fol. 4569] type of territory where slack action is more difficult to control than in others?

A. Yes, we have rolling territory over there, little sags, open humps three or four particular places that it is impossible to control the slack due to the fact that the head end is going uphill and the rear end is running in against it on ascending grade and the center of the train will be in a hollow. When the head end goes over the top of the hill, which this location is Pronto, we have the reverse movement, the head end will start running away and the rear end will start running the other way, due to the ascending grade.

Q. How is it affected by an increase in the length of train?

A. It is increased, the more cars the more slack.

Q. Is there that type of territory on the Tucson division between Yuma and Lordsburg?

A. Yes, in a number of places. Do you want them named?

Q. Do you have them?

A. We have a very bad one west of Chamiso and between Cochise and Manzano; on the west end going into Ligurta, near Smurr, Arizona, numerous ones.

Q. Is your ability to start a train affected by the [fol. 4570] length?

A. Yes, with the longer trains we have to use extreme caution in starting them. There is more weight involved and more slack. We have to use extreme caution in starting those trains to avoid pulling them in two.

Q. What about the length of time required?

A. It takes a longer time to start them and a longer time to stop them.

Q. Have you found any difficulty in stopping these trains as the length increases?

A. Yes, I had one experience on this 126-car train that had in the neighborhood of 12,000 M's. I hadn't used the automatic any place between Lordsburg and Deming and in making the station stop at Deming I figured in advance, due to the increased weight, that I no doubt would have to take a longer distance than I had been using ordinarily with the average 100-car train. So I started in at the west distance signal at Camp Cody, that is approximately two and a half miles to the depot, the point where I intended to stop. I made a ten-pound reduction on this train and immediately felt a surge, it seemed as if the engine gained speed, picked up more than what we were running. I immediately [fol. 4571] set another ten pounds and it finally began slowing down and when I passed over the west switch of Deming I was making in the neighborhood of 20 or 25 miles an hour. That is not yard speed but it happened that everything, all signals were green but I couldn't have done anything anyway had they been red. I continued, put the brake valve in service position and I finally stopped at the coal chute about 40 cars east of where I had intended to stop. After setting out seven cars I made an inspection at Kenzie, I picked this point out on account

of a slow order there, I just figured on driving by and stopping because I didn't feel I could slow that train down to the fifteen miles per hour in releasing and I picked out a milepost two miles from this slow order and I went over the slow order at reasonable speed but I didn't stop at the slow order, it took me another two miles and a half to stop that train. I experienced the same difficulty between Strauss and Anapra, that is a ten-mile hill on which we have to use the air. After leaving Lizard I set the air, made one ten-pound reduction and let it ride and the train finally slowed down going into Anapra and I added another ten pounds to it to stop, I never did release it in three and a [fol. 4572] half miles. After arriving at El Paso and I put this train away, I was very much concerned over it and took it up with the road foreman, Mr. Newell, and we had quite a little controversy on it and he came to the conclusion there was an obstruction in the brake pipe some place, but later here in Tucsosn I talked to Grover Graden, our road foreman, at that time, and we found out that in a tight train line you were not able to make your reduction sufficiently fast enough to draw the air back over 70 or 80 cars. Consequently those cars back of this point were simply feeding from your auxiliary through your leakage groove into the brake pipe and recharged that brake pipe as fast as we were drawing it out of the brake valve. That is the difficulty in long trains, that is the length is to increase friction in your brake pipe.

Q. And the getting of your air back for the reduction in the other brake?

A. Yes, sir.

Mr. Mason: You wouldn't mind deferring his cross-examination for a little while?

Mr. Strouss: No, that is all.

The Court: You may step aside. Call the next witness.

[fol. 4573] BENJAMIN T. CHEEK was called as a witness in behalf of the plaintiff and being first duly sworn testified as follows:

Direct examination.

By Mr. Strouss:

Q. Will you state your name, please?

A. Benjamin T. Cheek.

Q. Where do you live?

A. Tucson, Arizona.

Q. What is your business?

A. Locomotive engineer.

Q. You are employed by the Southern Pacific Company?

A. Yes, sir.

Q. What has been your experience in railroading?

A. I have worked for the Southern Pacific Company entirely. The first work I did was as a station employee at Benson in 1896 and 1897. I went firing about March, 1897, and was promoted to yard engineer in 1901 and road service in October, 1902. I have been working road service continuously since that time.

Q. Since 1902?

A. Yes, sir, October.

[fol. 4574] Q. Over what territory have you worked?

A. The entire seniority district from El Paso to Yuma and all the lines, I have made trips on all of them. I have also worked some on the south line but just in emergency but my regular district is via Bowie, Lordsburg and via Gila Bend, that is the regular seniority district. I am at present assigned via Phoenix line both ways, Tucson to Yuma, in passenger service.

Q. What type of service have you worked in, that is, passenger or freight?

A. I have worked in every class of freight service they had for a number of years from 1902 until 1924 at various points all over the road with the exception of between Tucson and Yuma. Since 1924 I have worked almost entirely in passenger service.

Q. You are now working in passenger service?

A. Yes, sir, I am assigned to train No. 3 westward and No. 44 eastward via Phoenix.

Q. What is your seniority?

A. Number one.

Q. What length of trains have you operated?

A. Before I came to work out of Tucson in 1923 I was employed out of El Paso in freight service regularly, vari-
[fol. 4575] ous sorts, work trains, local freights, mostly pool freight between El Paso and Lordsburg and we had trains of all kinds and lengths there up to as much as 110 cars. We had small engines at that time compared to the ones we have now. I, of course, didn't handle any trains

of over 70 cars in Arizona but I have handled passenger trains of all kinds from a motor car up to 14 in Arizona since 1924.

Q. Since 1924 you have been continuously in passenger service?

A. Yes, sir, with the exception of a trip probably once in a while out of here on helper service during the rush period. Once in a while they may call on us to make a trip in helper service eastward or on our lay-over.

Q. Were you in the courtroom when Mr. Stevenson testified?

A. Yes, sir.

Q. And Mr. Kennedy?

A. No, I wasn't here then.

Q. You heard Mr. Stevenson's testimony as to the duties of an engineer?

A. Yes, sir.

Q. Are the duties of an engineer on a passenger train similar to those on a freight train?

A. I would say they are the same as far as the preparation [fol. 4576] tion and requirements before starting, the service is practically the same.

Q. After you get into your run, how are your duties different?

A. In passenger service of course the conditions are quite different from freight service, principally about the speed with which a train runs. Of course the requirements of the service are entirely different, picking up passengers, mail and express instead of hauling freight traffic and is generally superior as far as train movement is concerned. We don't have to stop for opposing trains as often.

Q. In your work as an engineer you are required to know the brake equipment on the train and its operation?

A. Yes, sir.

Q. That is true in passenger service?

A. Yes, sir.

[fol. 4577] Q. There is additional equipment on a passenger engine over that of a freight engine, so far as air is concerned, and signals?

A. Why, yes, sir, we have a communicating whistle signal used so that the trainmen can communicate with the engine when it is necessary to inform us what they want done at times.

Mr. Strouss: I think that we could take a recess. I don't like to start in on the rest of this and stop. I think I will make better time.

The Court: We will take our mid-morning recess at this time.

(Thereupon, a short recess was taken, after which proceedings were resumed as follows:)

Benjamin T. Cheek was recalled to the stand, and testified further as follows:

Direct examination (Continued).

By Mr. Strouss:

Q. Mr. Cheek, is there slack in a passenger train?

A. Yes, sir, there is slack in both ends of each car and the drawbar and locomotive tender.

Q. And do you have slack action in passenger train [fol. 4578] operation?

A. Yes, sir.

Q. Is that affected in any way by the length of your train?

A. Naturally, there is slack in each car, and the longer the train the more slack in the train.

Q. Your passenger cars, are they, as compared with freight cars, heavier or lighter?

A. Well, the cars themselves are heavier than the ordinary freight car, that is, empty. They run considerably heavier in that respect, the actual weight of the car.

Q. And the Pullmans, are they a heavier car?

A. Yes, sir, the standard sleepers, sleeping cars, are considerably heavier than the day coaches and baggage cars.

The Court: Did I understand you to say that the passenger car is much heavier than the *the* freight car? What was the answer?

A. I said the empty car.

Mr. Strouss: That is, the empty passenger car is substantially heavier than the empty freight car?

A. That is right.

Q. And the Pullman cars are still heavier?

A. They are heavier than the day coaches, and baggage [fol. 4579] car, they are heavier equipment, such as dining cars and club cars, they run very heavy also.

Q. Do you know the length of passenger equipment, cars?

A. They vary considerably, I think from around 40 feet to in the neighborhood of 90 feet, that is from drawbar, I think they range in different lengths about that much extreme from one length to the other.

Q. Now, you said the length of the train does affect the slack action in the train?

A. Yes, sir.

Q. What about your ability to control it?

A. Well, we have experienced considerably more slack action in the long train,—We call them long trains in Arizona, a 14-car train, than you would in a short one, particularly in starting a train or stopping, or when running at speed where there is a change in the grade, the slack shows up at any time where the speed of the different cars change in relation to each other from any reason, where you change the speed of the head end of the train where the rear is not corresponding, it will run-in or run-out.

Q. Do you have territory on the Tucson division where [fol. 4580] that occurs?

A. Yes, sir, many places.

Q. Is that running-in or out of slack in that type of territory affected by the length of the train?

A. Yes, sir, even in passenger service they have a number of places where we have to take some action to avoid slack action that we can feel in eleven cars or over in running at speed, that is particularly on descending grades.

Q. Now, in handling passenger trains and controlling the slack, must you give consideration to the fact that it is a passenger train occupied by people who are not accustomed to train operation?

A. Yes, sir, I would say that we do. It seems like in riding a passenger train, the average public, they are glad to ride with more confidence, they must not expect to be knocked around; they will be in most any position in the car, and we try to handle them to avoid any sudden retarding of the train or jerking it out, it might throw them off balance, throw them against something in the train, or throw them down.

Q. In making the emergency application on a passenger train, are you able to control the slack?

A. Well, I would say no, different conditions running [fol. 4581] at high speed, we may not have an extremely

heavy jar in the train, but going slow after making an emergency application on passenger trains, we haven't much opportunity to control the slack, we may have a heavy jar.

Q. You don't have an opportunity to bunch your slack before the application is made?

A. Don't have an opportunity to do anything, only to stop, if an emergency comes up when you are going slow you wouldn't have time to do anything.

Q. Have you had occasion to make emergency stops in the last year or two?

A. Yes, several times.

Q. Have you made some notations?

A. Yes, sir, I have made some notes from what record I had where these cases came up.

Q. Would you just relate to the Court those instances?

A. Well, on December 17, 1938, on Train No. 3, leaving Tucson yard after we had made our running air-brake test west of the station and were going on out of the yard, you might say on approaching the north Main Street, there was a colored man drove a sedan automobile onto Main Street after we had passed Seventh Street, and he apparently never gave heed to the train or signal and stopped [fol. 4582] suddenly right in the middle of the westward main track, we were close enough upon him so that there was no way to avoid striking the automobile except setting the emergency. We did that. We stopped probably about 25 feet from the automobile. So far as I know there was no damage to the train or people in the train that was reportable. We stopped the train, of course, very suddenly and got the automobile off the track and we went on. In that particular case we had a train of 14 cars. I am quite sure there was fourteen cars.

Mr. Mason: What date was that?

A. December 17, 1938.

Q. What was the number of the train?

A. No. 3, Conductor McMindes. On the same date, we were quite late leaving here that day, about at or near Milepost 932, which is approximately two-and-a-half or three miles east of Chandler, we call it east of Chandler, it is really south by direction, on approaching Milepost 932, there is a road crossing two poles east of there, there was a man drove a Chevrolet Sedan onto the track at the

same time the train got there, fireman A. A. Kennedy, and he gave me warning, of course, when he saw the man wasn't going to stop, we were right there upon him, we made an [fol. 4583] emergency application. In that case it killed the man and his little daughter. We were going 60 miles an hour, and, as far as I know, there was no one injured in the train in that case. We were running at high speed.

In Phoenix yard, March 1, 1939, about Milepost 908 $\frac{1}{2}$, after making a reduction of speed, approaching Phoenix yard, and the train running on time on the orders that we had, we were not making the maximum speed permissible, we reduced the speed somewhat more on account of an automobile going south on 24th Street, apparently wasn't going to stop at the crossing. The woman driving the car finally stopped at the crossing, I released the brakes, and after that I noticed a child lying on the track some distance west of the crossing, a little baby girl. We made an emergency stop for that. We had 14 cars in that case, and, as far as I know, there was no injury to the passengers. Of course, there was some slight spotting of the wheels because of the train stop but not sufficient for any repairs to be made.

On April 5, 1939, on Train No. 44, with 11 cars, Fireman A. M. Adams, struck an empty cattle truck on a road crossing approximately a quarter of a mile east of Station named Conger. This was about seven o'clock in the morning, [fol. 4584] or thereabouts, broad daylight, we had 12 cars and making 60 miles an hour, and this boy drove his truck up to the crossing, apparently didn't see the train, and wasn't going at high speed; when the fireman determined he wasn't going to stop he hollered to me to set the emergency. He said, "Big hole her," is the common expression for that with railroad men. And a few days, let's see, on January 29, 1940, Conductor McMIndes, on Train No. 3, a man flagged us very violently and suddenly at the road crossing at Station called Cowden, a short distance west of Phoenix. We made an emergency stop and he said there was something the matter with the track, but we didn't find anything the matter with it.

On February 24th, this case was not an emergency application, but I rough handled the train as I call it, felt the slack action very plain going into Tempe station between the switches, a boy of about 15 years of age threw himself down over the rail, put his neck on the rail, stayed

there long enough so that I had to set the brakes heavily to avoid hitting him, and by the time I got the train stopped he got up and ran away. We stopped the train suddenly.

Mr. Mason: When was that?

[4585] A. I don't know whether that was reported to the Company or not. I told the station agent about it; February 24th, on Train No. 3.

Q. February 24th last year?

A. Of 1940, yes, sir; Train No. 3. I don't know how many cars we had in the train.

On October 21, 1940, Train No. 3, Conductor G. Shaw, leaving Tucson yard about 6.30 A. M., a man drove a truck onto Main street and stopped with his automobile truck about over the center of the eastward main track, there are two tracks there parallel with each other, the rear of his truck didn't clear the main track, and I made an application of the brake, figured that he could get off if everything was all right. He immediately started backing his truck up like he was going to get off the track, but when he got about on to the westward main track, he turned the car, the steering wheel, sharply to the right and back the car lengthwise over the righthand rail of the track our train was approaching on and headed the car directly towards our engine. Then I had to apply the emergency to keep from striking this automobile after I could tell what he was going to do. We had 12 cars in that case, and we stopped probably 15 feet from the car, something like that. [fol. 4586] I had another case in Phoenix yard, and I am not positive about the date, but I think it was April 17th, on Train No. 44. We were approaching Seventh Street this side of Phoenix passenger station and a laundry truck disregarded the wigwag signal, and there was a man going northward on Seventh Street and stopped to change a flat tire on the left front wheel of his automobile, and he had the extension jack handle out screwing the jack upward apparently to change his tire, and he was just in the clear of the train going by, so I was quite sure we could pass him all right so long as he stayed in that position. As we got closer, there was an automobile pulled up alongside of his car to about the center line of the street looking at it from my side, parallel to this car with the flat tire, and the laundry truck that was going in the opposite direction, or south. When we were right near the street intersection and whistling for the crossing, the fireman, A. M. Adams,

yelled to me to stop, so I pulls the emergency, and I couldn't see what was the matter, I was confident there was something the matter, and we just narrowly missed this laundry truck by just inches. In that case, there was an elderly lady who was being accompanied to the toilet, [fol. 4587] as I was informed by the conductor.

Mr. Mason: If your Honor please, this is hearsay, I object to it.

The Court: Yes, the objection will be sustained as to what the conductor told you.

The Witness: Well, the information that I got—

Mr. Mason: Your Honor, I object to any statement.

The Court: Objection sustained.

The Witness: The lady had her fingers smashed by the closet door closing on her fingers.

Mr. Mason: I ask that that statement be stricken and disregarded.

Mr. Strauss: Let me ask him: Are you required to make a report when a casualty occurs in a case?

A. They required me to make an accident report, and that is the information they gave me in filling out the report, I didn't know it myself.

Mr. Mason: You don't know anything about this yourself?

A. No, only we stopped the train in emergency at the street.

The Court: Sustain the objection.

The Witness: I didn't see the lady or talk to her.

[fol. 4588] Mr. Strauss: We ask that the defendant produce the reports made by the employees in connection with this accident.

The Court: You mean made by this employee?

Mr. Strauss: By the conductor or trainmen.

Mr. Booth: That is rather an unusual request I think.

Mr. Strauss: It is not an unusual request. The reports are in their custody and they are objecting to the testimony and they have the report of the accident. I haven't been able to find a form to on it to the Interstate Commerce Commission so I can't get it that way.

Mr. Mason: All that has been said about that accident, which would indicate it was reportable, has been volun-

teered hearsay on the part of the witness. I don't know that we have any such report. I will say this for the information of counsel, and it is obvious if he has been observing the papers before me, I have all the reports I have been able to find of any accidents on which Mr. Cheek has made reports and I haven't anything for this April 17, 1940.

The Court: Then you are avowing that the records of the company show no such report?

Mr. Mason: I have nothing before me. I haven't made [fol. 4589] any search myself but search has been made by our staff and I wouldn't say that it does not exist but it is not in court and is not in our possession across the street. It may be in our possession somewhere but a search so far has not disclosed it. Naturally we tried to get everything we could when we knew Mr. Cheek was going to testify and we don't want to be caught off guard.

The Court: Well, it is not here and cannot be produced at the moment so you may proceed.

Mr. Strouss:

Q. Have you anything further, Mr. Cheek?

A. The nature of the equipment on these passenger trains, they have what is commonly referred to as the conductor's valve so the trainman can stop the train as the occasion may arise or in their opinion is necessary and once in a while someone gets hold of that who is not authorized and will pull a cord and stop the train.

The Court: Mr. Cheek, is that conductor's valve in each of the cars or in the rear car?

A. They are in each car, as I understand it, on passenger equipment ordinarily. There may be some exceptions but I am quite sure they are in all the cars of the Southern Pacific. There is a cord attached, some of them go clear [fol. 4590] through the cars and others are in the end where the conductor can pull the cord to set the brakes.

The Court: That is comparable or similar to the conductor's valve that is in the caboose?

A. Yes, sir, the same purpose as I understand. On train No. 44, March 13, 1941, immediately after passing Campo station in Phoenix yard west of the passenger station someone pulled the conductor's valve on that train and stopped

the train in emergency, a train consisting of 12 cars. That is all I have had in the last two years.

Mr. Strouss:

Q. In passenger train operation is there any duty on the part of the engineer with respect to observing his train?

A. Yes, sir, we are required to look back at each opportunity on curves and occasionally on tangents to note the condition of the cars to be sure that they are getting along all right and if there is any defect in the train to take whatever action is necessary.

Q. Does the length of your trains in passenger service affect your ability to observe?

A. I will say that even with a train of 14 cars on a tangent, from the locomotive you would not be able to see any of the running gear of the cars back any distance; of [fol. 4591] course you cannot see the trucks at all from the locomotive.

Q. In observing is it necessary to observe the trucks?

A. To be of any particular value you might say as an inspection the trucks are probably where you would be more apt to have trouble or some defect. On curves, in a passenger train, if they are short enough we can see from one end to the other, if the curve is not long or not obstructed by buildings and cuts and things like that.

Q. The trains travel at pretty high speed, don't they?

A. The maximum speed permitted on the Tucson division is 65 miles an hour. In the territory that I work on most of it is sixty and in several instances they have speed restrictions for various reasons on the track on account of curvature and city ordinances and things of that sort but the biggest part of the time we naturally run at the maximum speed permitted for passenger service on account of the service requires us to do so to maintain the schedule.

Q. Does that have any effect in raising dust?

A. Yes, the faster you run the more dust you get. We make considerable dust in dry weather, particularly in some places where it is naturally silt and like forms of [fol. 4592] soil.

Q. How do the trainmen pass signals on a passenger train?

A. I didn't understand.

Q. How do they signal from the train to the engineer on a passenger train?

A. With a communicating signal device.

Q. Have you had any difficulty with that?

A. We have some trouble with it on the longer trains. At times it works when not desired and sometimes we don't get the number of blasts, the trainmen are trying to give the engineer to give him the information necessary.

The Court: Will you describe that equipment a little in detail just how that operates?

A. It consists—without being technical, I am not a mechanic—they have a valve in each car that the trainman pulls a cord and it makes a reduction in the whistle signal line. There is a whistle signal valve on the locomotive that is operated by reduced air pressure and has quite a large diaphragm on it and the reduction in the signal line moves this diaphragm momentarily and as long as there is a reduction in the line the whistle will blow from the air in the line itself and each time they pull this whistle [fol. 4593] down they allow time in between blasts sufficient, the whistle will blow each time they pull the cord.

The Court: The trainman would be actually blowing the whistle in your engine?

A. That is what it amounts to, yes, sir, that is the intention of it. When they want to communicate, we have a certain number of blasts for certain signals and that is what they endeavor to do.

Mr. Strouss:

Q. That is not a steam whistle?

A. No, it is a little bit of an air whistle.

Q. Just a small air whistle?

A. Yes, a little short air whistle. It makes a sound about like a policeman's whistle probably, not a very loud sound.

Q. Does the length of your train have any effect upon your speed to make your schedule and prevent delays?

Mr. Mason: Your Honor, I object to this question. I don't believe it has any materiality to the rebuttal that the state is undertaking, it doesn't seem to have any direct

bearing on the safety issue which seems to be the burden of the State's rebuttal.

The Court: Overrule the objection.

The Witness: Will you repeat the question?

[fol. 4594] (The last question was read by the reporter.)

A. Naturally, the heavier the train is the more difficult it is to accelerate the train and the longer it takes to get the train to maximum speed on ascending grade or on long heavy grades; if you get enough cars you probably wouldn't be able to maintain the schedule.

Mr. Strouss: Take the witness.

Cross-examination.

By Mr. Mason:

Q. Your entire experience in train service since 1924 has been in passenger service, hasn't it?

A. Practically speaking, yes, all of those assignments have been in passenger service.

Q. You are not undertaking to discuss here in this testimony anything with respect to freight service, are you?

A. Well, I haven't worked in freight service for years.

Q. For seventeen years?

A. Yes, sir.

Q. I take it you are familiar with the air brake equipment on passenger cars?

A. To the extent of handling it regularly.

[fol. 4595] Q. It is quite different from the air brake equipment on freight cars, isn't it?

A. As I understand, yes, sir.

Q. The air-brake equipment on passenger cars is such that you obtain immediate application or practically immediate application throughout the train when you make a reduction at the engine don't you?

A. Much quicker than you would on freight trains, yes, sir.

Q. It is a very rapid application throughout the train, isn't it?

A. Yes, compared to freight service.

Q. Another thing is you have more braking area on passenger cars than you do on freight cars, do you not, in the sense that you have six wheel trucks at each end instead of four wheel trucks?

A. I don't know as that would make any particular difference. I think the brakes are figured out at a certain percentage according to the weight of the cars on the tracks but they do have six wheel trucks on most of the cars.

Q. Practically all of the cars that you handle have six wheel trucks, don't they?

A. The majority of them, yes; I guess they do.

Q. The brakes you say, as you understand it, are adjusted [fol. 4596] just to have a certain amount of braking area and pressure in proportion to the weight?

A. I think that is the system they figured out. Naturally, they can't have above a certain amount maximum brake power.

Q. When you add more cars to your train and add more weight, you also add more brakes, don't you, in exact proportion?

A. They have brakes on each car.

Q. So you don't have any addition of weight without braking power in the longer train, do you?

A. That is right.

Q. You haven't handled many trains longer than 14 cars, have you?

A. I have never handled any with passengers in them.

Q. Are you quite sure as to that?

A. In passenger service I am quite sure.

Q. According to the record I have before me, on April 12, 1940, you handled train No. 3 from Tucson to Yuma. Do you remember that?

A. No, I don't. What was the date?

Q. April 12, 1940.

A. No, I don't recall it.

Q. Do you recall that during the month of March and April, 1940, there were a number of occasions when there [fol. 4597] were trains of more than 14 cars handled in Arizona?

A. There were some there, but I don't recall that trip.

Q. The document I have before me is form S-2370, time return and delay report of engine and train employees and as I read the report it shows you handled in that train No. 3—

Mr. Strouss (Interrupting): I think that should be put in evidence.

The Court: Yes.

Mr. Mason: I will show it to you and the witness when I am through with it, Mr. Strouss, don't bother me.

The Court: You may finish your question but there may be no answer to it until you have an opportunity to object.

Mr. Mason: I will continue with the question. 16 cars from Tucson to Phoenix and 15 cars from Phoenix to Yuma as nearly as I am able to make out.

A. Are you sure you have my name on that?

The Court: Just a minute.

Mr. Mason: I want to show the form to Mr. Strouss.

Mr. Strouss: I ask that the form be put in evidence if [fol. 4598] the question is going to be asked.

Mr. Mason: I don't want to unload all these little documents in the record as exhibits.

The Court: If counsel insists on it.

Mr. Mason: If counsel wants to put it in, he may put it in, I am not going to put it in.

Mr. Strouss: Then we object to the evidence going in.

The Court: The objection will be sustained then.

Mr. Mason: If Mr. Strouss is going to insist upon the rules of evidence, we will offer the document in evidence.

Mr. Strouss: No objection.

The Court: It may be admitted.

(The document referred to was received in evidence and marked "Defendant's Exhibit No. 321.")

Mr. Mason:

Q. Now look at exhibit No. 321, Mr. Cheek. That shows you were engineer on that train?

A. Engineer, yes, sir, but I don't remember a thing about it if I did.

Q. You would not challenge the time return and delay report, would you?

A. No, I don't deny that.

[fol. 4599] Q. That is the official report which was turned in?

A. It shows two engineers on there.

Q. That is the official report that was turned in as the result of which you received your compensation for that service?

A. That is not my report, that is the conductor's report.

Q. I show you another document here which is a conductor's time return and delay report for April 13, 1940.

and it shows you as the engineer of train No. 44 from Yuma to Tucson. Your Honor, I will offer the second time return and delay report in evidence and we will have these photographed so Mr. Strouss will not be without full information as to both of them.

The Witness: Yes, that is the conductor's report.

Q. It is a fact, isn't it, on this particular run on train No. 44 on April 13 you handled 13 cars from Yuma to Phoenix and 15 cars from Phoenix to Tucson?

A. I don't recall it if I did.

Mr. Mason: I will ask that this second time return and delay report showing the run of train No. 44 on April 13 be marked in evidence.

The Court: Any objection?

[fol. 4600] Mr. Strouss: No objection.

The Court: It may be admitted.

(The document referred to was received in evidence and marked "Defendant's Exhibit No. 322.")

Mr. Mason: We will agree to supply copies either by photograph or some other reproduction so that counsel will have them.

Q. Mr. Cheek, according to the record I have before me you have had only one incident or accident occurring while you were engineer of a passenger train in which a person, whether a member of the crew or a passenger, I don't refer to trespassers of course, suffered injury while on the train because of an emergency stop and any jar or jerk which may have occurred, is that correct? Do you know of any more than one such incident?

A. Well, from time to time they ask us about different cases where we get notice about and they ask for information whether we handled the train in any way or not pertaining to someone stating they had injury or something of that sort but I have no record of any other. The only one I know of was the lady.

Q. What was the record you were reading from?

A. I just took that off my report like the conductor's report you have there. The date and the delay is all I have, where I showed delay stop on the back of my engineer's trip report.

[fol. 4601] Q. Now, according to the record I have before me, and also, I recall your own statement, do you recall

an emergency stop that you made at Phoenix on April 17, 1939? Have you a note of that?

A. What is the date?

Q. April 17, 1939.

A. That is one that I said I was quite sure that was the date, but I had no record of it. I remembered that case, at least. April 17, 1939.

Q. April 17, 1939?

A. That is one I mentioned about, I believe, that an old lady was injured.

Q. This was at eight o'clock in the morning, was it?

A. Yes, sir.

Q. And you made an emergency stop at the Seventh Street crossing in Phoenix in order to avoid striking a laundry truck?

A. That is right.

Q. And according to the file that I have before me, which does not contain the copy of the form T report, I guess there was no form T made, there was no reportable casualty, although a passenger 80 years old did suffer a slight confusion?

[fol. 4602] A. They told me the old lady was a good sport and didn't make any claim on it.

Q. So that there was no reportable casualty in connection with that rough stop?

A. So far as I know, I don't know anything about that.

Q. Now, there were ten cars in that train, were there not?

A. I don't know; I have no record of that, but it wasn't a long train.

Q. I want to show you form C. S. 2611, which I have already shown to opposing counsel, Employees Report of Accident. Is that your signature on the form that you hold before you?

A. Yes, sir.

Q. Will you state whether or not it shows at the top that there were ten cars in the train?

A. Yes, sir, ten cars.

Q. So that the only time that any person has been injured, even though not a reportable casualty, where you made an emergency stop of a passenger train in Arizona, has been on a ten-car train?

A. I haven't told of other cases where they made claim, but I have no records.

Q. You don't know of any other?

[fol. 4603] A. No; you see I have no connection with passengers unless they ask me about train handling afterwards.

Mr. Strouss: May I ask counsel—Mr. Cheek has only testified from 1938 to the present time. Did you intend your question to cover all his period in service?

Mr. Mason: I asked him if he could recall any others.

A. We have no connection with the passengers. They ask us about it afterward, so that we get the information, that is all.

Q. Mr. Cheek, you made a report here on the form that I just showed you, in which you mentioned the slight injury to this old lady passenger, and signed the form. Now, don't you make inquiry as to injuries in all cases?

Mr. Strouss: Just a minute. I wasn't going to object to this 2611 being in, but in view of this question I ask that it be put in, because the 2611 shows that it is made on information given him by the conductor. Now, the question isn't fair.

Mr. Mason: I am going to ask this, Mr. Cheek.

Q. Don't you inquire of the conductor in every case where you think there may have been some possibility of [fol. 4604] injury?

A. Well, I wouldn't know anything about it unless the conductor told me in the first place, or some representative of the company asking me about it. In this case I made it out in the trainmaster's office from the information they gave me. I knew nothing about it at all.

The Court: Do you recall having made any previous similar reports?

A. You mean on this case?

Q. Yes.

A. Not in this particular case.

The Court: I think you misunderstood my question. I asked you if — recall on other occasions having made a similar report to this.

A. They give us information from time to time if anyone makes a claim for any kind of an injury, it may not be anything pertaining to train handling whatever, and they require us to make out an accident report whether we handle the train roughly, or any knowledge we have about it, if

we don't know, we fill out what information they give us, as I understand, it is stated on them, "Don't know," "Don't know," "Don't know," if we don't know.

Mr. Mason: You have made out these form 2611 reports [fol. 4605] on every occasion where there was an accident, haven't you?

A. Where they told me that I knew of, yes.

Q. You make them out whenever there is a grade crossing accident, don't you?

A. Sure, if I am implicated in the accident, and they want information.

Q. Now, as to observation of the train, Mr. Cheek, did I understand you to say that when the train is proceeding on tangent track, you cannot see the wheels under any of the cars?

A. That is right.

Q. It doesn't make any difference what may be the length of the train?

A. No.

Q. And when you are on curves you can see some of the cars behind you, can't you?

A. Yes.

Q. You see the rear cars more readily than you do the cars near to the engine, don't you?

A. Well, that is conditional. We can see, if you first go on a curve you see the head end first, as you get further around you see further back.

Q. The length of the train is no handicap to seeing the cars in the train from the cab as you go around the curves, is it?

[fol. 4606] A. Well, the further away, of course, the smaller any object looks, the visibility is less.

Q. But you still see them, don't you?

A. Probably, and may not, according to what it is.

Q. Now, as to the emergency valve, or the emergency cord, Mr. Cheek, that is available on every car of the train, isn't it?

A. I believe so.

Q. It is available no matter what the train length may be, whether it is ten cars or fifteen cars?

A. I think so.

Q. By the way, did you refer to a case in March of this year, about a month ago, where the conductor's valve was used?

A. I think so.

Q. That was on a train of twelve cars?

A. Yes.

Q. There were no casualties, were there?

A. No, not that I know of.

Q. Did the train break in two?

A. No, we were running 60 miles an hour.

Q. The conductor's valve, or rather, the emergency cord, which is the equivalent to a conductor's valve on a freight train, if used, stops the train without any action by the engineer, doesn't it?

A. Yes, decidedly so.

Q. It opens the train line and sets the brakes right now?

A. Yes, they go on plenty, the train stops.

Q. I think you said before, where application of that kind is made, no matter where it is made on the train, the application is immediately, or virtually so, throughout the train?

A. Yes, it takes effect very quick.

Q. Now, this communicating cord which is used to actuate a small whistle in the engineer's cab is entirely different from the emergency cord?

A. That has no connection with the brakes, it is just a signal.

Q. It simply uses the air to sound a whistle signal close to the engineer?

A. That is right.

Q. And that is available in every car of the train, isn't it?

A. I believe so.

Q. And it makes no difference what the length of the train, they can still communicate with you by virtue of that signal?

A. Yes, sir.

[fol. 4608] Q. You don't have any occasion, have you, noted in your memorandum book, Mr. Cheek, when you have failed to receive a signal communicated to you on a passenger train?

A. Well, I have had signals not satisfactory.

Q. Have you any record of any casualty because of failure to receive or understand any signal from the rear end?

A. None that I know of.

Q. Have you any record of any accident to the train without casualties because of failure to receive or understand a signal?

A. No, but we do take action sometimes on a signal sometimes when it is not intended or necessary; in other words, the trainman didn't pull the whistle at all, or we didn't get the signal blast in the cab that was intended by the trainman in some few cases.

Q. But in no instance that you can recall has there been any accident or casualty on that account?

A. I have had none.

Q. Now, you spoke of the duties in the general operation of passenger trains. Are those in accordance with the rule book?

A. I don't believe I understand your question.

[fol. 4609] Q. You testified as to your duties in general in the operation of passenger trains as passenger engineer, did you not?

A. Yes, sir.

Q. Are your duties in accordance with the Book of Rules?

A. Yes, sir.

Q. With the Air Brake Book and the General Transportation?

A. Yes, and the instructions from time to time.

Q. And those books like the Air Book and the Transportation Book of Rules, those are applicable all over the System, are they not?

A. Yes, sir.

Q. Applicable in New Mexico?

A. All over the Southern Pacific System.

The Court: It is quite evident that we cannot finish with this witness. The court will be at recess until two o'clock.

(Thereupon the court stood at recess until April 14, 1941, at two o'clock P. M.)

[fol. 4610] 2 P. M., April 14, 1941

All parties being present as heretofore noted, proceedings were resumed as follows:

The Court: You may proceed.

BENJAMIN T. CHEEK resumed the witness stand.

Mr. Mason: Your Honor, before we proceed any further with the cross-examination I think a word of explanation may be in order. In the direct testimony of the witness reference was made to an accident on April 17, 1940, according to my notes and I am sure that they are accurate in that respect, taking place at Phoenix yard. At that time I looked through the files of accidents in which Mr. Cheek or his train had been involved and I found none for April 17, 1940, and when the suggestion was made by opposing counsel that I should produce the record I said there was none to produce and there was none for April 17, 1940. It developed later in his examination that there was this occurrence at Phoenix on April 17, 1939, as to which we have a report which has been shown to the witness. That was the occurrence which involved a bruise to the hand of an aged lady passenger which occurred at the time the train [fol. 4611] stopped. According to the report before made, I will ask you if that is according to your information as well, Mr. Cheek, it occurred when the door closed on the lady's hand, is that correct?

A: That is what they said.

Q: It was not due to falling on account of the sudden stop?

A: No, not as I know of.

The Court: In other words, the confusion arose by reason of the fact that the witness was off a year in the date?

Mr. Mason: Yes. I have here the file on the accident and Mr. Strouss may examine it. There is no form T report because there was no report of the casualty.

Mr. Strouss: My request was made at the time the witness was stating what had occurred and objection was made and counsel on cross-examination brought out what the witness had been trying to say.

Mr. Mason: I asked him about an accident on April 17, 1939, because I wanted to develop that the only occasion where a person was injured in a train which he was han-

ding was this unreportable injury. That is the only occasion that you can recall, isn't it, Mr. Cheek?

[fol. 4612] A. That date is correct, I made a mistake if I said 1940; it was 1939.

Q. That is the only occasion when you had an unreportable injury to a passenger on a train which you handled, isn't it?

A. As far as I know.

Q. As a matter of fact, you have one of the finest records in passenger service that has ever been compiled by this railroad, haven't you?

A. I couldn't say that.

The Court: Well, at least that is rather remarkable service.

Mr. Mason:

Q. You have a record of at least twenty years last past without any disciplinary action other than commendation?

A. As far as I know.

Mr. Booth: We all admit that.

The Court: The modesty of the witness presents the answer.

Mr. Mason:

Q. I think, Mr. Cheek, that you are rather proud of your ability to handle passenger trains, aren't you?

A. Well, I try.

Q. You succeed, too?

A. I have had complaints, you never get good you know in my business.

[fol. 4613] Q. Just to be honest with us in the courtroom, do you think any of those complaints against your handling are well founded?

A. Well, I couldn't say. They have a right to make complaints if they feel things are not successfully handled, of course.

Q. I think you told us that passenger train brakes, especially the brakes on passenger train cars, are different in nature than the freight train car brakes in that they take hold at once even when a service application is made?

A. I don't intend to tell you that they take hold at once but the entire train will be applied much quicker than they would on a freight train.

Q. It is almost simultaneous?

A. Yes, practically so in service.

Q. There is no opportunity for the rear end of a passenger train to run into the front end because of the application of brakes on the front end where there has been a failure to apply on the rear end, is there?

A. I couldn't say that. They always set slightly in advance on the front end. If the train is running at speed, they might not notice the slack movement but if you apply the brakes at real slow speed the head end will stop before [fol. 4614] they set on the rear end at all.

Q. Isn't there just as much jar on the head end of the train when you set the brakes at slow because of the sudden stop?

A. I don't think so.

Q. Isn't it like the emergency stop with an automobile?

A. I don't ride the rear end of the trains much. If the head end stops before the rear end applies, they kind of bump, so to speak, and the other way they simply stop like you stop an automobile going slow.

The Court: Is that run-in action greater when you are going at a high rate of speed than at a low rate of speed?

A. You probably get a severe jar at real low speed, I mean where you stop almost immediately even with a light application of the brake the head end of the train will probably stop as quick as the brakes apply. In other words, before the air can be reduced on the rear end, there will be some slack action. It might not be severe but nevertheless it will move in against the rest of the train before the brakes can set.

Mr. Mason:

Q. You have had no real experience in the operation of [fol. 4615] long passenger trains, have you?

A. I found I did in two cases.

Q. The two that I mentioned this morning?

A. Yes.

Q. Other than those you have never operated a passenger train of more than 14 cars?

A. I got to thinking about it, I might possibly have in New Mexico during the war-time conditions.

Q. Not since 1920, then?

A. No, I haven't worked over there since 1923 and I believe they did operate a few trains. I worked on passengers considerably over there from 1915 to 1923 when the regular man took leave of absence, sometimes as much as 60 or 90 days at a time and I believe—you see they had no restrictions and the company may have possibly in a very few cases handled additional cars between Lordsburg and El Paso, which is in New Mexico. I couldn't say because I kept no record.

Q. You don't of your own personal experience since 1920 at least and again except for the two instances we have agreed upon, know anything about what the difficulties actually may be in handling trains of 15 or more passenger cars?

A. Only just from practical knowledge of handling trains [fol. 4616] in general. I have ridden in a few cases at least in California where they had more but I never handled the train.

Q. You are only judging from handling trains of 14 cars or less?

A. As far as actual knowledge is concerned, you might say, yes.

Q. There was no incident of any kind in connection with your two trains last year, was there?

A. Not that I recall. We had the additional cars just for part of the trip and as far as I know I made no note of anything that I know of.

Q. You arrived in accordance with schedule, did you not?

A. I believe we did. According to my record, we did at Yuma and were two minutes late at Tucson.

(Discussion off the record.)

[fol. 4617] Redirect examination.

By Mr. Strauss:

Q. You spoke about not being able to see the trucks on passenger trains?

A. That is right.

Q. Are you able to observe smoke when a journal is hot and smoking?

A. You mean fourteen cars?

Q. Well, suppose a car were up near the locomotive?

A. Well, it of course will be all according to the condition, if the wind was blowing, and the speed of the train and the condition of whatever it is smoking. At times you would see it very plain and other times you wouldn't see it at all.

Q. That is one way of detecting hot journals?

A. Yes, sir.

Q. Would the length of the train affect your ability to see the hot journal in that way?

A. Yes, particularly in passenger trains at high speed, unless the journals, you might say, are smoking badly, quite often it wouldn't be noticeable on account of the speed you are going into the atmosphere, and quite often the passengers' draining basins that have water in them, you know, the lavatory, why, the water, believe it or not, looks very [fol. 4618] similar to colored smoke when you are running at high speed when it hits the ground, but you can, of course, see the smoke if things are making very much smoke, providing the place is visible to you.

Q. When you make an emergency stop, do you get off the engine and go back to see if anybody is injured on the train?

A. No, only in cases where we have struck an automobile or trespassers on the track, of course, I went back to see if I could do anything for them.

Q. So far as a passenger on a train is concerned, if they were injured, the only way you know about that is by somebody telling you?

A. That is right.

Q. Is this the only—the 2611, which counsel referred to this morning, is that the only 2611 that you have ever filed?

A. No, no, no, I have had other requests to file them where people have claimed to be injured that I know nothing about, and they would give me the information as to where they claimed they were injured and what they claimed, and asked me to make a statement on it about the handling of the train and so forth; I have had to make them [fol. 4619] out several times.

Mr. Strouss: That is all.

Recross-examination.

By Mr. Mason:

Q. Mr. Cheek, as a matter of fact, the detection of hot wheels or hot journals is largely in the hands of the trainmen by virtue of the smell of the burning oil or grease?

A. Well, I would say, in my opinion, that they would ordinarily have to smell it or see it.

Q. And they can open the vestibule doors if there is any reason to suspect any hot journals, can't they?

A. Yes, they do that, as I understand it.

Mr. Mason: I think that is all, Mr. Cheek.

The Court: This witness may then be excused?

Mr. Mason: Yes.

CHARLES E. STEVENSON was recalled to the stand, and testified further as follows:

Cross-examination.

By Mr. Mason:

Q. Mr. Stevenson, you have seniority as an engineer from [fol. 4620] July, 1916, have you not?

A. Yes, sir.

Q. And your seniority extends over all of the territory except the Douglas line and the Phoenix line between Yuma and El Paso, possibly some of the branches?

A. Yes, sir.

Q. But it includes all of the main lines through Lordsburg and Gila?

A. Yes, and we have a percentage of the mileage which permits us to maintain one or two crews.

Q. You stand pretty high on the list of engineers on this seniority district, don't you?

A. Well, I am still in freight service.

Q. Well, you hold a regular assignment in freight service?

A. Oh, yes.

Q. Does your seniority permit you to hold that assignment in any part of the seniority districts?

A. Yes, I can hold a run on most any district outside of the helper districts.

Q. You could hold a run, for example, between Tucson and Gila if you like?

A. Yes, Yuma and Gila, Yuma and Phoenix—

Q. You then have your choice of working east of Lordsburg [fol. 4621] burg or west of Lordsburg?

A. Yes, sir.

Q. If you were handling trains west of Lordsburg, you wouldn't handle any long trains, would you?

A. No.

Q. Now, you were asked as to whether you agreed with certain passages taken from the Air Brake Book, Exhibit No. 319. As a matter of fact, Mr. Stevenson, is there any part of the Air Brake Book or the instructions contained therein with which you don't agree?

A. I try to conform my operations to the Air Book.

Q. Do you consider that this is a satisfactory code of instructions to use as an engineer?

A. It is the guide by which we are to operate.

Q. Is there any part of it which you think is wrong or mistaken?

A. I wouldn't say.

Q. As an engineer, you want to handle your train in the safest and best manner possible, don't you?

A. Yes, I attempt to.

Q. And you also attempt to handle it in accordance with the book, don't you?

[fol. 4622] A. As nearly so as possible.

Q. By handling it in accordance with the book, do you or do you not achieve the maximum of safety and expedition?

A. Well, in trying to operate in relation to the Book, we somewhere near achieve the results of trying to maintain slack action.

Q. You mean, to control it?

A. To trying to control it.

Q. Well, are there any of the instructions in the Book, which you as an experienced engineer would want to have changed?

Mr. Strouss: I object to that as immaterial.

The Court: No, the objection is overruled. You may answer.

A. I don't think that they would be interested in the opinion of just one engineer concerning that book, whether it is good or bad.

Q. You have no suggestions to make at the present time?

A. No, sir.

Q. You particularly were asked whether you agree with the statement that the heavier the engine and the longer the train, the greater is the care required, and you said that you did agree with it?

[fol. 4623] A. I do agree with that.

Q. Then you agree that when the engine is heavier and the train is longer, it can be handled if you use greater care?

A. You must exercise greater care.

Q. And when you do exercise greater care you are successful, aren't you?

A. Not in all cases.

Q. And it is equally true that you are not successful in all cases with lighter engines and shorter trains, isn't it?

A. That may be true.

Q. By the way, this exercise of greater care with the heavier engine is paid for in this sense, that the heavier the engine the higher the rate of compensation to the engineer?

A. Oh, yes, that is based on weight on drivers.

Q. This Air Book, by the way, applies just as much in New Mexico and Texas as it does to Arizona, doesn't it?

A. Oh, yes, that is the Pacific lines.

Q. It applies equally in Nevada and Oregon?

A. Yes, sir.

Q. You know that it does?

A. Yes, it is a Southern Pacific Company standard book.

[fol. 4624] Q. The same way with the rules contained in the Book of Rules of the Transportation Department, Exhibit 320, is that true?

A. Yes, sir.

Q. That is the System Code, isn't it? Now, you were asked about Rule 19 of the Air Book. Do you use Rule 19 in any of the territory between Lordsburg and El Paso?

A. Would you quote the rule?

Q. It is the one relating to heavy grade braking, it was quoted to you.

A. Well, we have no heavy grades where we would use retainers that that refers to.

Q. That rule applies when using retainers on heavy grades, does it?

A. Yes.

Q. Well, as a matter of fact—

A. (Interrupting:) But we are permitted to use retainers if in our judgment we think it would be necessary.

Q. As a matter of fact, you don't use them?

A. No, we do not.

Q. Not even on the longest trains?

A. No.

Q. How long since you, yourself, have operated a train when retainers were used?

[fol. 4625] A. If I remember correctly, the last retainers I recall using was between Tucson and Lordsburg district and on the Tucson-Gila district between Estrella and Bosque; that has been a long time ago.

Q. A very long time?

A. About 1920, I guess.

Q. Retainers haven't been used in that territory, so far as your own experience goes, for twenty years?

A. That is right.

Q. Then your statement that with the longer train more retainers must be used is not based upon any recent experience or any current experience?

A. No; I simply stated that in the time-table we are permitted to exercise our judgment in that respect, to handle a heavy train to help adjust the slack if we think it is necessary.

Q. Isn't that true, Mr. Stevenson: That retainers are used in proportion to the weight of the train and the number of operative brakes in the train? In other words, where the weight of the train per operative brake exceeds a certain figure?

A. Our rule doesn't read that way. It reads, 100 M's per operative brake or under, or up to and including, it is [fol. 4626] less than a hundred.

Q. And the necessity for the use of retainers is determined according to the weight per operative brake?

A. That is the idea, the heavier train and the weight is distributed evenly like over 100 M's per operative brake, then in your judgment you may use retainers.

Q. If you have a 70-car train or 60-car train, we will say, of heavy loads such as slag or coal, where you had more

than a hundred, or 125,000 pounds per operative brake, you might use retainers?

A. Yes.

Q. If you had a 125-car train of empty refrigerators where you had only about 53 M's per operative brake, you wouldn't need them at all, would you?

A. Yes, we would; we would need them on the head end to assist in controlling that slack.

Q. You would? Have you used them on a train?

A. We never had a train of that type. 100 cars of empties is all I handled, I have a record of one 126-car train.

Q. On a hundred-car train of empties, have you used retainers on any of these trains in this territory?

[fol. 4627] A. No, because these 100-car trains are west-bound trains and we are able to negotiate that territory oftentimes with the use of only the engine brakes.

Q. Now, those trains would have 53 M's per operative brake, approximately, wouldn't they?

A. Approximately, yes.

Q. Or less than half as much as a solid train of slag or coal loaded in gondola cars?

A. I might add there—

Q. Isn't my statement true, less than half as much loading per operative brake than if you had a solid train of slag or coal?

A. Yes, if I had that same train in slag or coal, as you speak of, I would feel it would be necessary to use retainers to adjust the slack, and I do use the retainer on this tank for a distance of six miles westbound to control the train.

Q. On the engine tank?

A. Yes, on the engine tank.

Q. That is really not the same as using retainers throughout the train?

A. In this respect, because the engine brake, the idea of the engine brake is operated with the retainer turned up, and then released, and by using tire coolers, giving a sufficient time for the retainer, about the time you think it has leaked off, we re-apply, and for a distance of six miles we are able with the assistance of the tank brake and retainer between applications, we couldn't use it for six miles without burning the tires up; that is the only instance I have of using retainers.

Q. That is where you are using the engine brakes and not the train brakes?

A. Just the engine brakes.

Q. And that keeps the engine brake applied?

A. No, it keeps the tank brakes applied, the engine brake is released, but there is a check valve in the return line which has to go through the retainer, in that way the air is retarded slowly.

Q. That keeps the tank brake applied and gives you a little drag on the train, although you don't use the train brakes at all?

A. Don't use the train brakes at all, avoid it if possible.

[fol. 4629] Mr. Mason: I think you said—if you didn't I will ask you the question anyway—so far as slack action is concerned, Mr. Stevenson, the effect of slack action depends a great deal upon the speed of the train, doesn't it?

A. We get slack action at our maximum speed of 40 miles an hour in certain localities.

Q. But the momentum of the train in case there is an emergency application at the front end will keep the train moving and prevent the solid run-in?

A. The shock may not be so great at high speed.

Q. It will be substantially less, won't it?

A. The few instances I have seen where the air was pulled the shock was pretty great.

Q. You say you have had the air pulled on you from the rear end?

A. Yes, I have had it twice.

Q. The emergency valve used?

A. Yes.

Q. When the emergency valve is used by the conductor, the air applies first at the caboose, doesn't it?

A. Yes, sir.

Q. In that case there won't be any run-in of slack from the rear, will there?

[fol. 4630] A. No, it will run out.

Q. It will stretch the slack, won't it?

A. It will stretch the slack in that particular instance.

Q. The jar, if any, will be felt on the engine?

A. That would be mostly felt on the engine because it would depend upon a particular track that the train was on at the time. If the train was bunched and the man at the rear end of the train pulled the air, you naturally are going

to get a very severe run-out and break the train in two. I have a case that I can relate where that happened just that way.

Q. You had a break-in-two at Wilna on December 28, 1925, where the emergency valve was used in a 100-car train?

A. Yes, broken knuckle.

Q. No one was injured?

A. No one was injured that I know of.

Q. The entire damage consisted of a broken knuckle?

A. Yes.

Q. You also had an application of the air from the caboose at Camp Cody on October 18, 1936?

A. Break-in-two in two places.

[fol. 4631] Q. That was a 93-car train, wasn't it?

A. I couldn't give you the exact number but I know there were six or seven sleepers on the rear end of that train. That made it equivalent to the length of 100 cars.

Q. Dead-head sleepers?

A. Yes.

Q. There was no injury to anybody?

A. Not that I know of.

Q. None reportable, at least?

A. Not that I know of.

Q. You also had a break-in-two at Pembroke on the west end of the division on March 23, 1932, didn't you?

A. If you have more information on it, I can tell you.

Q. According to my record you had a broken knuckle in a 69-car train at Pembroke on March 23, 1932, because of the engineer's failure to control the slack in the train?

A. I don't recall having that charged to me.

Q. I show counsel and the witness form No. 7489, engineer's break-in-two record bearing what purports to be the signature of Charles E. Stevenson and ask you to look at the form, Mr. Stevenson, and state if that is your signature?

[fol. 4632] A. Yes, that is my signature.

Q. Does that refresh your recollection as to the break-in-two at Pembroke on the date I mentioned?

A. I don't recall it but if I am permitted to read what I said—

Q. Yes.

A. You said I was unable to control the slack.

Q. I said the report indicates an inability to control the slack.

A. (Reading) "On third attempt at taking slack, slack ran out breaking knuckle seven cars ahead of the caboose. I started train after taking slack second time, then stalled while taking slack third time, slack ran out. Must have had a few brakes at the rear that were slow in releasing. After putting knuckle in started train on second attempt. Delayed 103 about twenty minutes."

Q. You delayed the passing passenger train?

A. That is very bad territory, that is uphill.

Q. I was going to ask you if that is not the grade from Pembroke to Mohawk?

A. No, it is at Pembroke west, it is right downhill and we oftentimes have to back up over two miles when we can't start.

Q. You say that you were going downhill?

[fol. 4633] A. No, I think we were east, that report will show.

Q. That train was first 416 so it must have been eastbound?

A. It was eastbound because it is all uphill.

Q. You were going uphill from Pembroke to Mohawk?

A. The particular spot the train was standing on was down and at the distance signal it descends more making a sort of hook out of the rear end of the train in starting.

Q. You worked pretty steadily during the year 1940, didn't you?

A. I lost thirty days.

Q. Just the month of August?

A. August.

Q. Was that a vacation?

A. Yes, sir.

Q. Other than that you worked steadily making more than twenty trips every month during the other eleven months, didn't you?

A. It averaged about that.

Q. Nearly all of that was in freight service and a little in passenger?

A. Just an occasional trip.

Q. My memorandum indicates that you made 245 trips [fol. 4634] altogether during the year. Would that be about right?

A. That would be pretty close to it. I averaged ten or eleven roundtrips a month and worked eleven months.

Q. You had no reportable accidents or casualties on any train that you were operating during the year 1940, did you?

A. No, I don't believe in 1940.

Q. All of that period was, insofar as freight train operation was concerned, spent in the long train territory between El Paso and Lordsburg?

A. Yes, sir.

Q. As a matter of fact, Mr. Stevenson, you have never been yourself a reportable casualty during all of your career, have you?

A. To myself?

Q. Yes.

A. I can't give you the date, but I could look it up, that I fell off the engine at Smurr a good many years ago, fifteen or eighteen; just two or three days' disability. I slipped off the step.

Q. My memorandum indicates that you lost two days in 1926?

A. That is probably right.

Q. Which would not be a reportable casualty?

[fol. 4635] A. No, I was just off two or three days, I don't recall which.

Q. That two days' disability occurred in connection with a slip while the engine was standing, did it?

A. Yes, we were standing still. I attempted to get down and the handrail or my glove was greasy and my hand simply slipped down the rail and I was not able to hold myself. The step struck me in the back a little and skinned my back and I laid off a couple of days.

Q. You referred to the passing of signals from the rear end. Have you ever had a casualty occur on a train where you were engineer or fireman because of the failure to see or understand the signal given from the rear end?

A. No, no one was reported injured to me that I know of.

Q. Have you ever had a casualty occur on any train where you were fireman or engineer which was due to the use of the conductor's valve on the rear end? By "casualty" I mean personal injury to a member of the crew involving more than three days' disability.

A. No, I can't say that I have.

Q. You spoke I think in your testimony of the case where [fol. 4636] the conductor's valve was used after starting

in a 97-car train where you had seen the man get on and subsequently the valve was used. You actually saw the man get on the rear end, did you?

A. What we actually see is the man, as we get further away from the man he appears as a dark object and we see a light between him and the train and as that dark object closes up to the train that is all we have to view, that the man has gotten on. His giving the signal after that is out of the question.

Q. When the valve was used on this 97-car train, there was no casualty, was there?

A. None at all.

Q. So far as your own personal experience is concerned, there isn't any actual hazard from the use of the conductor's valve?

A. Yes, there is.

Q. You told me it has never resulted in a casualty in your experience?

A. In my experience I have seen them break a train in two.

Q. Those break-in-two's haven't resulted in any casualties?

A. No, it was lucky there wasn't anybody standing there. [fol. 4637] I have never had the experience I have related there and fortunately or unfortunately there haven't been any.

Q. When you speak of a break-in-two, the breaking of a knuckle which keeps the train from moving is a break-in-two, isn't it?

A. Yes, anything that has parted outside the coupler being open is a break-in-two.

Q. It results in whatever delay is necessary to replace the knuckle?

A. Yes.

Q. And put the train together again at the point of the break?

A. Yes, sir.

Q. Usually that is a comparatively short delay, isn't it?

A. It depends upon the distance the break is from either the engine or the caboose.

Q. You have break-in-two's on trains of less than 70 cars, don't you?

A. Yes, I have had one or two.

Q. You had this break-in-two, for example, at Pembroke on 69 cars?

A. Yes, that is a different case, that is starting a train, slack action had nothing to do with that break-in-two. That is, it says the slack ran out but I mean running along, [fol. 4638] slack action had nothing to do with it.

Q. That was not a break-in-two due to the use of the conductor's valve?

A. No.

Q. It was due to the run back of slack as you started the train?

A. Yes.

Q. You have discussed the long hold method of train braking?

A. Yes.

Q. That is not an authorized method under the book, is it?

A. No.

Q. And you don't use it?

A. No.

Q. Have you any record of any casualty due to a failure on the part of the engine crew to see a possible defect of freight car equipment from the engine?

A. A casualty?

Q. Perhaps I better refresh your memory. You spoke of the engineer's duty to observe the train from the engine and try to see how it is running?

A. Yes.

Q. Have you any record of any casualty to any train, [fol. 4639] long or short, where you may have been engineer or fireman which was due to your failure to see any difficulty in operation?

A. I cannot recall any casualty that was caused by our failure to observe.

Q. Mr. Stevenson, when a train is proceeding down a slight grade I take it there is a tendency of the rear end of the train to close up on the front end a little bit, isn't there?

A. Yes, sir.

Q. That is what you call bunching of the slack?

A. Run-in.

Q. If the slack is bunched as you proceed down grade and you have an emergency application on the front end, you cannot have any run-in of slack further, can you?

A. That would depend upon whether you were on tangent track or curved track, the slack would adjust itself. If it was straight track, the slack would be in.

Q. The slack tends to adjust itself because of the springs and friction members in the draft gears, doesn't it?

A. It adjusts itself but it follows the line of least resistance in a grade condition.

[fol. 4640] Q. If you have loads on the head end of the train and empties on the rear, again the situation is different than if you have empties on the head end and loads on the rear?

A. You would possibly get the reverse movement.

Q. If you had empties on the head end and you have to make a sudden application of the air at the front end, your loads will tend to run further after the application than empties would?

A. Yes.

Q. The consequent run-in from the rear will be less, will it not, if you had empties on the rear and loads on the head end?

A. Empties on the rear and loads on the head?

Q. Yes.

A. The natural tendency would be for the loads to run away from the empties.

The Court: In other words, that is an ideal condition if you have a mixed train to put your loaded cars next to the engine?

A. They do that but it is not ideal.

The Court: Would that be preferable to having your loaded cars on the rear?

A. If I may state, years ago we used to handle those kind of trains and were very unsuccessful. They put 10 cars on the head end and 20 cars on the rear end, about [fol. 4641] 10 cars ahead of the empties. That was to distribute the weight throughout the train because the idea of 30 cars of oil and 30 cars of—boxcars—the weight was so great that we were unable to control it against the brake

pressure, empty and the loaded, the differential in the braking power of the two cars.

Mr. Mason:

Q. Mr. Stevenson, the slack action in a train depends to some extent upon the distribution of the loads and empties if the train consists partly of loads and partly of empties, doesn't it?

A. You would get better adjustment of slack if the weight were properly distributed.

Q. Isn't this also true, that when you are starting a train from a standstill, especially if you are starting from a level or against a slight grade, the slack will be stretched in the front part of the train but not in the rear?

A. It will be stretched in the front part and as the weight will pull on the springs at the rear.

Q. The draft gears are the place where the stretch will occur?

A. Yes.

Q. Besides the very slight amount at the coupler faces?

[fol. 4642] A. Yes.

Q. While you have a fairly complete pull out from normal to extended position at the front end of the train, you won't have but very little pull out at the caboose, will you?

A. I couldn't say.

Q. You don't know how much force it takes?

A. I don't know how much force.

Q. You don't know what the striking or pulling force measured in pounds would be?

A. No, I have no way of knowing.

Q. The tractive effort of your locomotives expressed in pounds, do you recall it at the moment?

A. No, I have no figures on the tractive effort.

Q. You are generally running in the territory east of Lordsburg in freight service on which the Southern Pacific has 5000 class engines?

A. Yes, 5000 and 3700, some 3600, E-3's and 4's.

Q. The 5000 class locomotive according to the figures already of record has about 84,200 pounds of tractive effort. You don't disagree with that, do you?

A. I don't have any record and I don't know.

[fol. 4643] Q. The large E-type locomotives, the E-4 and E-5, have about 75,150 pounds of tractive effort. You don't

know then that with those friction draft gears it takes from two hundred to five hundred thousand pounds of pulling or striking force to move the draft gear from normal to fully extended position?

A. No, I have no way of knowing.

Q. You are not familiar with the construction of the draft gears on freight cars, are you?

A. I have seen the spring arrangement, I have an idea that they cushion both ways, so as to speak.

Q. You are not familiar with the friction members of the draft gear?

A. I never had one taken apart.

Q. You don't know about those at all?

A. No, that is a car man's work.

Q. You do know that these draft gears have a cushioning effect both as to run-in and run-out of slack?

A. Yes.

Q. By the way, this slack in freight trains is necessary, is it not?

A. Yes, sir.

Q. You couldn't hardly start a train without it?

[fol. 4644] A. You couldn't start a train with a solid block.

Q. It is necessary to enable you to round curves and go over dips and humps?

A. Yes, sir.

Q. And otherwise necessary to the irregularity of the pull of the engine and the roadbed over which it runs?

A. A certain amount of slack is necessary.

The Court: We will take our mid-afternoon recess at this time.

(Thereupon a short recess was taken, after which proceedings were resumed as follows:)

The Court: You may proceed.

Mr. Mason: That is all we have with Mr. Stevenson.

Mr. Strouss: I have one question I overlooked when Mr. Stevenson was on direct examination.

The Court: The Court will grant you permission to ask it, Mr. Strouss.

[fol. 4645] Redirect examination.

By Mr. Strouss:

Q. Mr. Stevenson, have you recently within the last two or three years on a train that you were pulling had an accident where there were casualties to trainmen?

A. Yes, I had one accident, an undesired emergency on June 30, 1937, 100 cars, engine 4360 west.

Q. What happened?

A. There were two brakemen in the caboose who were thrown to the floor and injured or bruised up quite badly. I don't know just how much time they lost. Their names were Hudson and Fontaine.

Q. It was a reportable accident?

A. I believe it would be, yes. They naturally lost a number of days.

Q. On cross-examination you were asked about your seniority and your right to work west of Lordsburg where trains of 70 cars and less are operated. Is there a difference in the operating conditions so far as the capability of handling trains is concerned in the territory east of Lordsburg as compared with that west of Lordsburg?

A. I would say so, you have to exercise more care and judgment in handling the longer and heavier trains.

[fol. 4646] Q. I believe you testified that in a great many instances coming west from El Paso the full distance to Lordsburg you would not have to use the automatic brake at all?

A. That is right.

Q. And that with the exception from Strauss to Anapra going east on trains from Lordsburg to El Paso without using the automatic brake?

A. We would have to use the automatic brake some place in there to stop that train for inspection and water, but very few places between Lordsburg and Strauss that we could stop that train with the air brake, the grade conditions are not such that we can make these automatic.

Q. It would only be for the purpose of stopping for inspection or water?

A. Yes.

Q. Would that be true of the territory west of Lordsburg?

A. No, I should say not, you could make a great many brake applications.

Mr. Strouss: I think that is all.

[fol. 4647] Recross-examination:

By Mr. Mason:

Q. The territory west of Tucson as far as Yuma isn't very much different than the territory between Lordsburg and El Paso, is it?

A. From Tucson to Maricopa is practically one water grade, where our grade is more or less rolling up and down, it is changeable. Out of Lordsburg it is slightly downhill four or five miles, then uphill fifteen or sixteen miles; then we are rolling over the Continental Divide and slightly downhill to Deming. Then slightly uphill over Aden, it is more rolling country than between here and Maricopa and the grade changes at Maricopa and ascends to Estrella.

Q. As a matter of fact, your ruling grade between Lordsburg and El Paso is variously .8, .55, 1 per cent and then a small amount of about .9?

A. That would be about it.

Q. Your ruling grade between Yuma and Tucson is 1 per cent and a very small amount of 1.02 between Pembroke and Mohawk and between Lava and Sentinel?

A. Yes.

Q. But otherwise very much less, and the 1.02 between [fol. 4648] Gila and Estrella?

A. Yes.

Q. And then less than 1 per cent between Estrella and Tucson in either direction, isn't it?

A. Yes.

Q. As to this undesired emergency which you mentioned, you don't know whether either of those injured men were a reportable casualty, do you?

A. I believe it was, I believe they lost a week or more.

Q. You don't know?

A. I couldn't state positively.

Q. You didn't see them, did you?

A. I wouldn't see them after I got in. I know they didn't work the next few trips.

Mr. Mason: That is all.

(Witness excused.)

Mr. Mason: Your Honor, I wonder if we may withdraw exhibits Nos. 321 and 322 for the purpose of having them

reproduced and substitute photostats or true copies otherwise?

The Court: Photostatic copies may be received in lieu of the originals.

[fol. 4649] WILLIAM H. HAUSMAN was called as a witness in rebuttal, and, being first duly sworn, testified as follows:

Direct examination.

By Mr. Strouss:

Q. Will you state your name, please?

A. William H. Hausman.

Q. Where do you reside, Mr. Hausman?

A. Los Angeles, California.

Q. What is your business?

A. Railroad man, broken down.

Q. Are you working at railroading now?

A. No, sir.

Q. What railroad experience have you had?

A. Since 1916.

Q. With the Southern Pacific?

A. On the Northern Pacific until 1923, since 1923 on the Southern Pacific.

Q. What service?

A. Transportation department, trainman.

Q. Have you been promoted?

A. Yes, sir.

Q. When were you promoted?

A. April, I think, in 1927.

Q. What territory have you worked on the Southern [fol. 4650] Pacific?

A. The entire Los Angeles division.

Q. What length of trains have you worked on?

A. All the lengths from caboose hop to 150 cars.

Q. By "caboose hop" you mean caboose and engine?

A. Caboose and engine.

Q. That has been on the Los Angeles division?

A. Yes, sir.

Q. Now, is it necessary at times in the operation of trains for the train crew on the rear of the train to give signals to the head end?

A. Yes, sir.

Q. What effect, if any, has the length of the train upon the ability to pass signals to the head end?

A. That depends on your weather conditions; there are times when it is impossible to see a signal or get a signal over 15 cars.

Q. What about a hundred-car train?

A. Well, the brakemen are supposed to be distributed out in order to get the signals and pass them on to the engineer, but the conditions on curves and everything, when you don't have opportunity to do that, you have to [fol. 4651] operate by guess and go.

Q. Is that when a train is moving?

A. Yes.

Q. That they are distributed out over the top?

A. Yes, sir.

Q. I expect in your railroad experience you know what slack action is?

A. Yes, sir.

Q. And from your experience on short and long trains what, if any, is the effect in the increase in the length of trains so far as slack action is concerned?

A. On the long trains your slack action is more severe than on a short train.

Q. The shock is more severe?

A. The shock, yes, sir.

Q. You have been injured in slack action on train operations?

A. Yes, sir.

Q. I believe you called my attention to three different accidents which resulted in injury to yourself, the first being on the 19th day of April, 1931. Will you relate that incident?

A. That, I think, was down on what we call the Iris Hill, when we go down there they try to keep that train under control down there in order to take water at Nyland, they [fol. 4652] get to going too fast down there and the engineer, as a rule, uses his straight air in place of his emergency to avoid getting hot wheels.

-Mr. Booth: I can't hear you.

The Witness: I was going down there to spot water going into Nyland, there is quite a grade down there, they try to control the train there without using their emergency air in order to make the stop and save the jar, they use the

straight air there; that is where you get your slack action, going down there, that is where I first got hurt.

Q. What happened when you were hurt?

A. We were going down there pretty fast and what I call slammed a jamb on, and I was thrown against the front of the caboose and fractured my arm here.

Q. Were you disabled?

A. Along about fifteen days, I was off, something like that. The doctor released me to go back to work at that time, I think it was around fifteen or twenty days, I couldn't say exactly how long it was at that time.

Q. You called my attention to another accident in which you were injured, which occurred in 1935 at Stoneman, [fol. 4653] June 24, 1935. Will you relate that incident?

A. That was when I was assisting the conductor in making out his reports; I was sitting up close to the desk, he was sitting at the desk, and I was sitting on the bunker box, we had a doubleheader, and the engineer says he just used his straight air going down that sag, the slack action came and drove me into the desk and broke three ribs.

Q. Were you disabled in that incident?

A. Yes, sir.

Q. How long?

A. I think it was practically two months that I was off then, or probably a little longer.

Q. Now, on the 21st day of October, 1937, were you again in an accident which caused you injury?

A. Yes, sir.

Q. By the way, I have neglected to ask you how many cars were in that train in 1935?

A. In 1935?

Q. At Stoneman.

A. I think we had around 124 or 125—oh, at Stoneman, 96 cars; I believe we had.

Q. And the one descending the Iris Hill in 1931, you had how many?

[fol. 4654] A. One hundred twenty-five, I believe is correct.

Q. Now, the accident at Yuma in October of 1937?

A. We had 122 empty stock cars.

Q. What happened there?

A. Well, I couldn't say what happened on the head end; slack action in there; severe slack action threw the conductor and myself from one end of the caboose, I went

through the bottom panel of the door on the other end of the caboose, head first.

Q. Where were you when the slack action began?

A. Following the conductor out of the rear door of the caboose.

Q. And when it ended?

A. Lying on the floor in the opposite end of the caboose under the door.

Q. Did you suffer personal injuries in that accident?

A. Quite a few of them; my face was all disfigured, my nose was practically cut off, and it reacted on an injury to my back.

Q. Any ribs broken in that accident?

A. In the last one?

Q. Yes.

[fol. 4655] A. No, there wasn't no ribs broken there.

Q. Did you suffer a disability there so that you were not able to work?

A. I haven't been able to work since.

Q. Did you spend any time in the hospital?

A. Yes, I was in the hospital at Indio. The Company got after the doctors there to get me out of the hospital to send me to San Francisco and didn't seem to like that hospital up there very well, because the treatment I had there before—

Mr. Booth: What has this to do with it? We object to that, to these personal reminiscences.

The Court: Yes, the objection is sustained. The last part of the statement may be stricken from the record.

Mr. Strauss: Read the question, and then start answering.

(The question was read by the reporter.)

A. Yes, sir.

Q. How much?

A. About three weeks there at Indio, not in the hospital. I was in the hospital, I think, for about a week, then I had a place right across the street from there, across the railroad track that the doctor told me I could stay over there and come over and take my treatments from him there at [fol. 4656] Indio. I was there about three weeks or more, then I went to Los Angeles and I doctored there with Dr. Null, a company doctor at Eagle Rock, oh, for three or four months.

Q. And you have not been able to work since?

A. No.

Mr. Strouss: We have copies of the form T reports which were furnished us by the Southern Pacific Company on the first two accidents. I am getting a certified copy of the Form T filed with the Corporation Commission on the accident which occurred at Yuma, which the witness has testified to.

Mr. Mason: We have no objection to putting them in evidence.

The Court: They may be admitted in evidence.

(The documents referred to were received in evidence and marked, respectively, as Plaintiff's Exhibits Nos. 323 and 324.)

Mr. Mason: Do you want to reserve a number for the third one?

Mr. Strouss: Yes, I will reserve 325 for the Form T filed with the Corporation Commission.

Mr. Mason: Covering the accident at Yuma October 21, 1937.

Mr. Strouss: That is correct.

[fol. 4657] Q. Mr. Hausman, on Exhibit 324, which is a Form T report for the accident which occurred in June, 1935, the Form T appearing to be signed by C. F. Donnatin, Superintendent, appears this statement: "Brakeman while seated on locker seat at desk in caboose claims he was thrown off balance by slack action, striking his side against caboose desk. There was no unusual handling of train, no defects in equipment, and accident was due to failure of brakeman to properly protect himself while riding over district with which he was thoroughly familiar." Had you omitted any method of protecting yourself of which you knew at that time?

A. You always have to get yourself braced practically all the time going around any of those cabooses with long trains at any time. At any moment you are liable to have that slack action.

Q. You were doing everything you knew to protect yourself at that time?

A. Yes, sir, I was sitting down; of course, a man has to use his hands, and he cannot hang on all the time.

Mr. Strouss: Take the witness.

Mr. Mason: Your Honor, we would like to defer cross-examination if we are to have any. I am not sure we will have any.

[fol. 4658] The Court: Very well, the cross-examination will be deferred until tomorrow morning. The court will be at recess until tomorrow morning at ten o'clock.

(Thereupon, the court stood at recess until April 15, 1941, at ten o'clock A. M.)

[fol. 4659] 10 A. M., April 15, 1941

All parties being present as heretofore noted, proceedings were resumed as follows:

The Court: The witness who was on the stand when we recessed, Mr. Hausman, do you desire to cross-examine him, Mr. Mason?

Mr. Mason: I have a very few questions.

The Court: Come forward, Mr. Hausman, please.

WILLIAM H. HAUSMAN resumed the witness stand.

Cross-examination.

By Mr. Mason:

Q. Mr. Hausman, in your testimony yesterday you mentioned three accidents that had happened to you on various trains of more than 70 cars. Now I want to ask you isn't it a fact, Mr. Hausman, on September 30, 1935, you had a very serious accident which caused you to be disabled for 123 days?

A. In 1935?

Q. Do you remember it?

A. Was it in 1935?

Q. September 30, 1935; at Los Angeles on a train of 21 cars, you claimed to have slipped on the caboose floor [fol. 4660] and fallen?

A. Yes.

Q. That is correct, isn't it?

A. Yes, sir.

Q. You were disabled for 123 days, weren't you?

A. Yes, sir.

Q. And received from the company as compensation or allowance on account of the accident the sum of \$2,800?

A. Yes, sir.

Q. That accident happened according to your statement while the train was standing, didn't it? Is that correct?

A. That is correct.

Q. Do you remember an accident that happened at El Centro on July 6, 1930, where you were conductor of the train, a train of four cars?

A. Where I run a nail in my foot?

Q. Yes.

A. Yes.

Q. You were disabled then for five days, were you not?

A. Yes, sir.

Q. That also happened while the train was standing, didn't it?

[fol. 4661] A. Yes, the switcher was down there in the yards.

Q. That likewise was a short train?

A. It wasn't a train.

Q. There were only four cars being handled and they were standing still?

A. Switching, yes.

Q. Do you remember an accident that happened on January 9, 1937, at Waldorf, California?

A. Yes, sir.

Q. You were then a brakeman on a 7-car train, were you not?

A. Seven or nine, passenger train.

Q. Seven-car passenger train. The train was moving at a speed of 10 miles an hour or less?

A. Or more, we were heading in there.

Q. You were heading in to switch?

A. Yes.

Q. You were getting off the train just before you reached the switch?

A. Just before we entered into the passing track.

Q. You were the head brakeman, were you?

A. The rear brakeman.

Q. You were getting off the train just after it entered the switch and in order to turn the switch back so as to [fol. 4662] line it up for the main line?

A. Yes, sir.

Q. This is the ordinary move that a rear brakeman has to make whenever the train heads in, in order to make a meet, isn't it?

A. Yes, sir.

Q. On that occasion you were so seriously injured when you stepped off the train that you lost 96 days, is that correct?

A. A re-injury to my back.

Q. You received from the company as compensation for the time lost and the injury the sum of \$2,250?

Mr. Strouss: I object to that as immaterial.

The Court: You mean as to the amount of it? In what way is it material, Mr. Mason? I will hear you but I am inclined to sustain the objection as to the compensation paid.

Mr. Mason: Perhaps it is not directly material except it goes to show that the witness is one of these people who capitalizes his injuries and who really lives, as you might say, on the blood money that is paid him for that.

The Court: I will sustain the objection.

Mr. Mason: That is all, Mr. Hausman.

Mr. Strouss: That is all.

(Witness excused.)

[fol. 4663] LOUIS A. FAIL was called as a witness in rebuttal and, being first duly sworn, testified as follows:

: Direct examination.

By Mr. Polley:

Q. Will you state your name, please?

A. Louis A. Fail.

Q. And your occupation?

A. Conductor.

Q. And who are you connected with?

A. Southern Pacific Company, Rio Grande division.

Q. And how long have you been so connected?

A. My seniority dates as brakeman from November 29, 1911. As conductor from May 22, 1916.

Q. And what other experience have you had in railroad-ing?

A. I began railroading when I was fourteen years old as a messenger boy on the Santa Fe and Argentine. I continued on as messenger boy, oh, I think yard clerk, about three years; then I was a caller, then I think it was the fall of 1909 that I started in as switchman, and I have been in train service continuously since that time.

[fol. 4664] Q. At the present time have you a regular assignment as a conductor?

A. Yes, sir.

Q. And over what territory is that?

A. El Paso, Texas, to Lordsburg, New Mexico.

Q. And over what territory of the Southern Pacific have you worked?

A. Between El Paso and Yuma, all lines with the exception of Florence to Christmas, Fort Huachuca to Lewis Springs, and also on the Coast division from Santa Barbara to San Francisco.

Q. What length of freight trains have you worked on during that time?

A. Well, all lengths up to 136 cars.

Q. And numerous trains containing over one hundred cars?

A. Yes, sir.

Q. Does the Southern Pacific Company have rules relative to the duties of brakemen and conductors?

A. Yes, sir.

Q. Are you required to take an examination on those rules?

A. Yes, sir.

Q. I will hand you State's Exhibit 320, and ask you whether or not those rules are contained therein?

[fol. 4665] A. Yes, sir.

Q. And you are familiar with them?

A. Yes, sir.

Q. Will you state and describe the duties of a freight brakeman from the time he is called until the time he gets his train started?

A. Would you want his duties described out of El Paso or out of Tucson, Arizona, or out of Yuma? There might be a little difference because of the fact that in Arizona you have three brakemen, in New Mexico and Texas you have two, and if you want me to describe the duties, we will say, of a flagman, from the time he reports at El Paso to prepare himself and the run, a flagman is required to be at

the caboose at least thirty minutes before the train is called to depart. The flagman fills the lanterns, markers, builds the fire, and has the caboose in shape to make the journey, and checks his flagging equipment and any other supplies that are furnished him, or rather, furnished the caboose.

Q. Now, at El Paso, does the brakeman assist in inspecting the train before the start?

A. Nothing more than to let the hand-brakes off.

[fol. 4666] Q. That inspecting is done by—

A. Car men. This brakeman's duties, the flagman is responsible for the rear of that train, of course, at all times, and his instructions at El Paso are to remain at or near the caboose due to cars being thrown in on this track that the train is being made up on and to protect and see that the cars are not kicked out on the lead in the way of switching movements being made behind him maybe to other tracks; while the duties of the head brakeman, he has to show up there not later than thirty minutes before leaving time and it is his responsibility to see that all of the brakes are let off the train except the rear five, which the flagman is responsible for, and those brakes are left on there to hold the train in this track and so that it won't run out and be side-swiped by switching movements behind it.

Q. What are the duties of the conductor?

A. The conductor is supposed to show up at the caboose thirty minutes before leaving time and check up with the flagman and see that the caboose is in shape to make the trip in the way of supplies, then he proceeds to the head end of train, taking initials, numbers, and light weights of cars, and watching for broken seals on the cars as he is checking [fol. 4667] the train.

Q. Is there anything else you would like to add concerning the brakeman's or conductor's duties at the station?

A. Yes, the conductor's duties, I consider that one of the most important times of his trip, he goes to the telegraph office and checks the register against opposing and over-due trains, trains that would interfere with his head rights or moving or leaving the terminal, and receive his orders, then gets his waybills and delivers the orders to the engineer and compares time, and both are satisfied that

they have the right to leave town. That I would consider was about all that is necessary.

[fol. 466S] Q: After the train leaves the station, what are the duties of the brakeman?

A. The brakeman's duties are to continuously be on the alert, look out for any defects that might occur in the running equipment of the train and while moving they are continually watching the train, the head brakeman from the gangway of the engine and the rear brakeman from either the cupola or rear platform of the caboose.

The Court: In Arizona what position does the swing brakeman take?

A. The swing brakeman at times, his duties might require him to be in the middle of the train to pass signals. He helps to inspect the train at all times, in other words, he is what we call the boss brakeman. If there is switching to be performed, he is the fellow who does it, oversees it. In other words, he receives the instructions from the agent at the station telling him where he wants these cars arranged at his station and he also inspects the train at all stops.

The Court: While the train is in movement, does this swing brakeman ordinarily ride in the middle of the train or does he spend part of his time in the caboose or up in the locomotive?

A. In that case it depends on what he has to do. If [fol. 466S] he doesn't have any work to do over at any of these towns he is going to come through like Maricopa or these other places, he may be found in the caboose but he is kind of a free lance on there, he is supposed to be where the work is, where the duties are to be performed and he could still be riding on the engine and be in his proper place as well as if he were riding on the caboose and be in his proper place. One of his main duties is to keep sharp lookout and inspect the train.

The Court: But the head brakeman and the flagman ordinarily stay in their respective positions at the head end and back end?

A. That is true, the head man is required to be on the head end to head in through sidefracks while the rear man is required to be on the rear end to protect the rear end of the train, be out flagging.

Mr. Polley:

Q. Does the swing brakeman observe the train while it is in motion?

A. Oh, yes.

Q. Do members of the train crew pass signals from the caboose to the engine?

A. That depends on how many cars you have.

Q. That is one of their duties, is it not?

[fol. 4670] A. Yes, that is true, if there is cause to give these signals that is their duty.

Q. What duties do they have in relation to protecting the train at crossings?

A. That is one part that the swing man helps to play. Usually where there are road crossings to be cut and coupled up and protecting people when they go across these road crossings when you have an opening made in the train, that is a duty that comes under the swing man. He is in the middle of the train, possibly the head end is around a curve or the view is obstructed to the engineer and between him and the head brakeman they pass signals to one another in coupling or uncoupling these crossings at public highways.

Q. Does rule 99 of exhibit No. 320 require anything of the train crew?

A. It is one of the most strict rules in the book, that is the protection of your train, rule 99.

Q. Will you read it, please?

A. (Reading) "Rule 99. When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure protection; one-fourth [fol. 4671] mile from rear of train, if such distance has been reached before being recalled, he must place one torpedo on the rail; one-half mile from rear of train, or at the point from which recalled if less than one-half and more than one-fourth mile, he must place two torpedoes on the rail two rail-lengths apart; if less than one-fourth mile, he must, if safety to train requires, leave a lighted fusee. If conditions, such as curves, foggy or stormy weather, or descending grade, require, he must continue back a greater distance, placing two additional torpedoes. He may then return to the single torpedo, where he must remain until relieved by another flagman or recalled by

the whistle of his engine. When recalled he may remove the single torpedo and return, unless a following train be seen or heard approaching under conditions in which his train may be overtaken by such train, in which event he must go toward the approaching train displaying stop signals.

"When a train is seen approaching closely before flagman has reached the required flagging distance, he must immediately place one torpedo on the rail, and continue in the direction of the approaching train, displaying stop signals: By night, or by day when conditions warrant, a [fol. 4672] lighted fusee must be displayed.

"By night, or by day when conditions warrant, flagman must leave a lighted fusee to protect his train while returning.

"When circumstances require, train must be moved forward a sufficient distance to afford protection.

"The front of the train must be protected in the same way, when necessary, by the brakeman; if not available, the fireman.

"When a train is moving under circumstances in which it may be overtaken by another train, the flagman must take such action as may be necessary to insure protection. By night, or by day when the view is obscured, lighted fusees must be thrown off at proper intervals.

"Before a train fouls the main track in pulling out of a siding or other track, flagman must, if necessary, go back with stop signals a sufficient distance to provide necessary protection.

"When day signals cannot be plainly seen, owing to weather or other conditions, night signals must also be used.

"Conductors and engineers are responsible for the protection of their trains in both directions."

Q. You mentioned the word "torpedo," what is a torpedo? [fol. 4673]

A. A torpedo is a small cap with explosives in it that makes an explosion when run over by the train wheels.

Q. You place it on the rails?

A. That is right. At this time I would like to say that this rule has been changed due to our streamlined conditions and the distance has been increased from one-half to three-quarters of a mile which is something new and

it hasn't had time to be put in this book of rules. However, we are instructed by bulletin as to its effect.

Mr. Mason: Where you read "one-half mile" at the bottom of page 47 in the first paragraph of rule 99, that should be "three-quarters"?

A. That is right.

Mr. Mason: In both places?

A. That is right, that is due to our speedier trains.

The Court: The explosion of this torpedo under the engine has a very distinct meaning to the engineer?

A. Yes, sir.

The Court: It tells him to, stop?

A. One means stop and two means reduce speed and [fol. 4674] run under caution, expect to find the main track occupied.

Mr. Polley:

Q. Are trainmen required to set and release retainers when retainers are used?

A. Yes, sir.

Q. Do they have any duties in connection with hand brakes?

A. Yes, sir.

Q. Just what are they?

A. When cars are set out on sidings, a car must be secured with the hand brake. If your engine should be disabled and the train was set out, then the train is secured by the hand brakes both head and rear ends, a sufficient number in your opinion to anchor the train.

Q. Are they required to check brake beams?

A. They are required to check everything. In making an inspection of the train there are brake beams, that is one of the main objects that they are searching for in making an inspection of the rolling equipment, or running gear equipment of the train.

Q. What do they do if they find a brake beam down?

A. It depends. If the brake beam hasn't been damaged, I mean by that bent or sprung or twisted, there are times when they are able to rehang them and put them back [fol. 4675] up in position. However, the brake cannot be operated because we don't have bolts of sufficient size and length to hang these brake hangers so we usually take the

bleed rod from the brake cylinder and more or less wire them up and then cut the air brake out so that the air brake is inoperative.

Q. Would any damage result if the brake beam was down and was not detected?

A. Yes, it can cause derailment or damage to switch points or damage to the block signal wiring of the track or it could cause a number of things.

Q. Are they required to cut out cars?

A. Yes.

Q. What are their duties in that connection?

A. When the air brake is sticking, the triple valve is not functioning properly or when the brake rigging has been damaged and is inoperative or not safe to operate the car is then cut out, the air brake I mean is then cut out.

Q. Are they required to open and close switches?

A. Yes, sir, at all sidings where it is necessary to take siding for the meeting or passing of trains.

Q. Do they have any duties in connection with refrigeration [fol. 4676] for cars?

A. Yes, sir, we had refrigerator cars loaded with different kinds of perishable commodities, most any kind that you can think of, such as tomatoes or potatoes or onions or apples or lettuce or mixed vegetables or most any commodity and under certain conditions they haul these commodities differently. Some of the more perishable nature they pre-cool that car, by that I mean they get the car cooled before they load it and others like onions or potatoes or tomatoes possibly they don't undertake to pre-cool the car and they haul that commodity with the vents open when the temperature is above thirty-two to forty-five degrees. Our latest instructions are to close tomatoes, some instructions say forty degrees and some forty-five, while potatoes and apples are closed at thirty-two and when the temperature rises above that the brakemen are required to open the vents.

Q. Where are the vents located?

A. There are four lids on the tops of the end of each refrigerator car possibly about three and a half feet square or something like that.

Q. When they are raised, do they extend above the top of the car?

A. Yes, sir, the lid extends possibly up eighteen inches.

[fol. 4677] Q. Are trainmen required to make reports on

the train? In other words, do they have any clerical duties to perform?

A. No, they have no clerical work to do.

Q. Are they ever required to make repairs while on the road?

A. Yes, they are required to help repair anything that becomes disabled if it is in our power to do so, to keep the train moving.

Q. Are they sometimes required to repair journals?

A. Yes, sir, and that sometimes runs into quite a little job.

Q. Are they sometimes required to repair a knuckle?

A. Yes, sir, and that runs into quite a little job. I think those knuckles weigh, there are two types, and I think one weighs 92 pounds and the other weighs 98 pounds, or thereabouts, and when you put one of those on your shoulder to carry it out on a 90-car train to where this outfit is broken in two, and some of the places along the track where there isn't any shoulder on the track for you to walk on and you have to come down here maybe, oh, 20 or 30 feet below the fill and walk through the weeds and stumble in climbing over boulders, and walk down through [Vol. 4678] gullies that have culverts over them but they don't have any footpath on, and at the same time with this ninety some pounds on your shoulder, and looking out for rattlesnakes, it does run into a job.

Q. Now, do trainmen have any duties in connection with local service that are peculiar to that service?

A. Oh, yes, in local service, they unload way freight, set out and pick up cars, pick up disabled cars set out by other freights to rebrass these cars.

Q. How about mixed trains?

A. On mixed trains—a mixed train means that it hauls passengers and freight both, and the flagman is usually the one that is required to take care of the mail and express on this mixed run, while the head brakeman takes care of all the switching, the setting out and picking up.

The Court: You only have those mixed trains on the branch lines?

A. That is right. In our territory anyway, that is all.

Mr. Polley: What are the duties of a conductor in passenger service?

A. Well, you show up at your initial terminal thirty [fol. 4679], minutes before leaving time and you check the register, obtain your orders, and then you meet the incoming conductor and get the through tickets from the incoming conductor, and any information that he has to give you pertaining to any passengers on the train, such as minor children being sent through without any caretaker or parents.

Q. Does that happen frequently?

A. Yes, quite often. That, I would say, was not such a major duty, the child is usually well behaved, but after all you have to watch out for this child; you go through the train and you take care of the tickets, take up the tickets from everyone aboard, or all aboard are accounted for.

Mr. Mason: If your Honor please, aren't we wandering a little ways away from the case when we talk about the duties of a passenger conductor as to collecting tickets and taking care of minor children?

Mr. Strouss: If the Court please, it is showing his duties, the work he has to do, and would go to the matter of his ability to look after the train as a whole and look after the safety of the train, it has a lot to do with safety, the duties that he has to perform.

[fol. 4680] The Court: Objection overruled.

Mr. Polley: Does he have any additional duties concerning passengers, that is, the care?

A. Yes, we have the old folks to look out for and wait on, and in other words make yourself useful and take care of people that are on that train, as well as helping to get it over the road. Now, of course, you understand the engineer, he is supposed to be infallible, we are all supposed to be infallible, but after all it is my duty, if the engineer passes the station ahead of time, I am held equally responsible for the engineer, and my duties require me to go back through the sleepers day and night, the berths are all made down, and if I don't keep right on my business I will become lost back there because it is dark, and I am going over that road by his whistle.

Q. Now, when additional cars are added to the train, is the number of passengers increased?

A. Oh, yes, they don't haul passenger cars for nothing empty around here unless they have to; there are more people to look after.

Q. Has a passenger conductor any duties with relation to inspection of the train while it is running?

A. Yes, we are all responsible for that, and we are required to patrol the train day and night. By that, I mean going back from the head end to the rear end and opening doors to try to see. However, that is almost an impossibility, because there is so much sand blowing, and dirt, and also water from the toilets, wash basins, splattering and blowing back there, that it is impossible to look forward and see anything. You can look back toward the rear and you might see if there was anything blazing, but it is very doubtful. The greater part of your inspection is due to smell. As far as hot boxes are concerned, it is smell that you are trying to safely operate on.

Q. Now, in describing the duties of a freight brakeman, you testified that one of his duties was to rebrass journals. Just what is that operation, or why is it necessary to rebrass journals?

A. Well, due to maybe several reasons, the car might be overloaded, would cause it to run hot, the journal might be rough or have been rough prior to the time this car was loaded, or the box may lack oil or packing that lubricates this journal, or the waste may have been removed by trespassers to build a fire to keep warm by, we have that happen quite often, and we have instructions to stop cars that [fol. 4682] have been standing out on sidings in the country for a long time, we are required to inspect every one of those journal boxes before we load it and pick it up, because the hoboes might have pulled the packing out, and we would get into trouble before we knew it if we didn't inspect them. There are many reasons that will cause a box to run hot.

Q. In other words, hot boxes cause the necessity for rebrassing the journals?

A. That is right, the journal has become what we call irritated.

Q. Do hot boxes develop suddenly or over a period of time?

A. Sometimes they do and sometimes they don't. And that is one thing that I would challenge anyone on, I have handled many a one, I suppose thousands. Some I have had good luck with, and others I haven't.

Q. Well, sometimes is it possible to detect a hotbox before it becomes too serious?

A. That is right.

Q. And how is that detected?

A. Either by smell or sight.

Q. In other words, you can either smell it burning or see it?

[fol. 4683] A. That is right, and that is the only way you have of knowing.

Q. Now, when one is detected, is it sometimes possible to prevent it from getting any more serious?

A. Yes, sir, sometimes when we catch them in time we can doctor them up and have no more trouble with them.

Q. What do you mean by "doctoring them up"?

A. I mean by pushing back the packing which oils the journal, or we pour water in there sometimes, this packing works out toward the front of the box and then there is nothing at the back of the journal to raise this oil to lubricate it and that is what causes it to run hot.

Q. When a hotbox has gone too far and it is necessary to rebrass the journal, just what do you do? Explain that in detail.

A. Well, the first thing, about the biggest job of it, is to get the tools up to the car.

Q. Where are they located?

A. Well, everything is located necessarily—and when I say everything, that means quite a lot, on the caboose, except the jack and the jackbar. However, that jack and jackbar, up until three or four years ago was kept on the caboose, but due to hard times or circumstances that I know [fol. 4684] nothing of, the jack was removed from the caboose, and only one on the engine, so that it makes it mighty inconvenient. We stop for a hotbox, and the head man, he doesn't know whether it is necessary to brass the car until he has come back and had a look at it, then you would have to send him back to the engine; this might be 91 cars and it might be three cars, there is no certain car that is going to run hot, and no certain position, so that he has to return to the engine regardless of the conditions, and get this jack and jackbar. I don't know the weight of these jacks but I would say that the first ten car lengths you carry one of them, oh, they are about, the ones we have, are probably eight or ten inches square and maybe

ten or eight inches high, probably the first ten car lengths you carry this jack it would weigh maybe about 30 pounds, but the second ten carlengths you carry this jack it goes up, and if you carry it 90 car lengths, I suppose it would weigh that many pounds or thereabouts.

Mr. Mason: If your Honor please, I object to this. It doesn't seem to have anything to do with safety of train operation, this described operation for which brakemen obviously are paid, it is part of their job.

[fol. 4685] Mr. Strouss: We have a right to rebut the evidence as to the delays and the time that can be made in the operation of these long trains.

Mr. Mason: This seems to relate to the sore backs and sore shoulders of men who are carrying out their duties in carrying a jack along the length of the train and doesn't seem to have anything to do even with the delay.

The Court: The objection is overruled.

A. If permitted, I might border upon the safety of what this rebrassing the cars—

Mr. Mason: I suggest that we proceed by question and answer.

The Court: Yes, just answer the question.

Mr. Polley: Let us confine ourselves to the job of actually rebrassing the journal.

A. The conductor in our territory, with two brakemen, the conductor, he goes back to the caboose and gets a pail of dope. I would imagine this water bucket will hold three gallons, and that is filled with oil-soaked waste, and then it is necessary to take up a jack block, and it is made of oak about three inches thick and about thirty inches long and about 12 inches wide, which is pretty heavy, a Keeley can that will hold at least ten gallons of water, the packing [fol. 4686] hook and packing iron. Those are the instruments that you use to push this packing in or pull the old out with; then you have two biased wedges that are probably 18 inches long and made probably out of oak four by four, cut biased. That is placed on top of the wheel of the car under the floor of the car to hold the wheel down, and when the head brakeman returns with this jack, the jack is placed upon this jack block underneath the journal box and the box is jacked up, raising the box higher than

the journal of the wheel, so that the old brass may be removed and new brass put in.

Q. Then are the tools returned?

A. Yes, sir; sometimes we are able to pull up and load them on the caboose, and other conditions may prevent it.

Q. About how long does it take to complete this whole operation here?

A. Well, if you knew that you were going to brass them when we stop, you couldn't do it under thirty minutes. If you had these tools handy and right at it, it couldn't be done under thirty minutes. I would say that any hotbox that is going to have to be rebrassed up the train, we will say, 25 cars from the caboose, or 25 cars from the engine, [fol. 4687] one hour would be pretty good time to do it in.

Q. Has the length of the train any effect upon the time necessary?

A. Oh, yes, the length of the train puts your tools further away probably from where this might be.

Q. Suppose the hotbox occurred at night; are there any greater difficulties confronted there?

A. Well, at night you locate it by the blaze, and after you go up and see, of course, when we first see a hotbox we take a bucket of water, we don't know how long it has been blazing, but as quick as we see it blazing, that is when we try to get it stopped; it could have been blazing and blazing bad underneath the car next to the wheel and not flaring out, and it might have been carrying on, so the important thing is to stop as quick as you see it, then the difficulties are carrying these tools up to the job in the dark; and walking through these weeds is another question too, we have rattlesnakes over in our country, I don't know how you fellows feel about it, but they will give you their attention and it makes it kind of bad walking through the weeds, I am a little bit afraid of them.

[fol. 4688] Q. How often are you required to replace journal brasses? Is this merely theory or something to be actually contended with?

A. Oh, it is something to be contended with almost every trip. Now we don't have boxes that require rebrassing every trip, but we have new wheels under cars and I think that that is just an unwritten rule with a trainman, when he sees a new wheel he will put his hand on the journal box to see that it is all right, because we are interested until

that wheel gets down to a bearing; I mean the journal comes down to a bearing, then it is all right. New wheels, we pay particular attention to, that is our duties in inspecting the train. If we find fresh oil splattering against the wheel, we know that oil has been heated a little bit, we pay attention to that.

Q. Are there any places where carmen rebrass the journals?

A. Yes, on my district we have Lordsburg, at Lordsburg we don't have car inspectors, we have what is called an emergency repair station, two carmen on duty in the daytime and one at night, and upon their receipt of a wire from the incoming conductors they will meet the train and make the necessary repairs.

[fol. 4689] Q. Now, in your opinion, what effect does the number of cars in a train have upon the necessity to replace journal brasses?

A. Well, now, I don't—

Q. Well, I will ask you this: Do more cars make it more difficult to detect a hotbox?

A. Yes, because you understand there are four boxes on each side of each car, and the more cars the more boxes to watch out for and the more responsibilities, the more danger.

Q. By the same crew?

A. Yes, sir.

Q. The same number in the crew. And if a hotbox is not detected, does it burn off?

A. If they have my personal record here, they will find whether they will burn off or not, I have dropped two of them. Yes, sir, and that is very essential, and one thing that trainmen are alarmed over at all times, is the burning off—

Mr. Mason: Just a minute. That trainmen are alarmed at all times, that is hearsay. If it is the witness who is alarmed, that is different.

The Court: Yes, I will sustain the objection to that. It may be stricken.

Mr. Polley: I believe you have testified that if detected in time, hotboxes can be prevented?

[fol. 4690] A. Yes, sir.

The Court: We will take our mid-morning recess.

(Thereupon a short recess was taken, after which the witness was recalled to the stand, and proceedings were resumed, as follows:)

[fol. 4691] Mr. Strouss: If the Court please, yesterday I had two exhibits, copies of form T in connection with Mr. Hausman's testimony, and stated I would have today a certified copy of another form T. I received the copy, but I notice that the certificate does not have the seal of the Commission. I have given it to counsel, however, and they have agreed it is a true copy.

Mr. Mason: We will waive the lack of formal certification.

The Court: That is the one you reserved the number for?

The Clerk: Number 325.

The Court: It may be admitted in evidence.

Mr. Strouss: I think we might take the form T and leave the certificate out.

Mr. Mason: That is satisfactory.

The Court: The certificate may be removed and the form T admitted in evidence.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 325.")

[fol. 4692] LOUIS A. FAIL resumed the witness stand.

Mr. Polley:

Q. Mr. Fail, I believe you testified this morning that sometimes it was necessary to repair broken knuckles on your run. Will that happen very often?

A. Well, I might say not any oftener than hotboxes appear and are necessary to be brassed but at times you do break them.

Q. What happens when a knuckle is broken?

A. The coupling is just broken so that you can't handle it anymore. One thing that causes more knuckles to be broken on our district than any other one cause that I know of is due to trespassers climbing on and off the train and getting around on them and they step on these cutting levers, which is a lever at the end of the car that we push down that raises the lock block in the coupler that allows it to uncouple. Then we will say that this trespasser steps on a cutting lever on the rear end of a

train of most any length. Of course the longer the train the greater the shock is going to be at the far end away from it. Then you are liable to have a broken knuckle some place near the engine because the weight of the engine [fol. 4693] is there and this air is setting, going up through this cut off cars just like lightning and when it gets up there and there is something up there to hold this upper end there is no whip cracker effect to it, something is going to give and we have a broken knuckle.

The Court: In other words, it doesn't break the knuckle at the point where the train was broken in two?

A. That is right, that is what causes the break-in-two maybe up there. Then we will reverse that move and he may step on a cutting lever up near the head end and may cause the trouble to be back on the rear end. Those are conditions that happen right along and I would say in my experience that causes more broken knuckles than knuckles wearing out or bad action of the air. Of course we have those, too, but we have them of all nature.

Q. Is it always possible to replace or repair a broken knuckle on the road?

A. No, I would rather have that to be a broken coupler. A broken coupler, it is necessary to change it out then.

Q. What does that job entail?

A. We have a chain that is possibly, I would say as long as from here to that door which is probably ten feet I [fol. 4694] suppose, eight to ten feet long and this chain is made out of iron I would say that was one inch thick, links. I would say that these links are—I don't know—maybe six inches long. Then these hooks are made out of iron, the long link that is about fourteen or sixteen inches long on one end is made out of heavier iron than the links are and it may be made out of inch and a half iron and the hook I would say is probably made out of inch and three-quarters or two-inch iron and it is usually about that long. When we encounter trouble of a broken draw bar there is certain conditions that we can get rid of that car. If the coupler is on the far end from the engine, we can always maneuver and take it to the next town or set it out and get rid of it that way. That is one of our easy ways of getting rid of it, but if it is on the rear portion of the train that is the hard way. Then it is necessary under any circumstance so long as you are

doing this job with your engine, by that I mean not any one coming up behind you with another locomotive doing it, it is necessary for you then to chain that car. You can't do anything with it except handle it with the chain.

Q. Where is the chain located, where are they kept?
[fol. 4695] A. They are kept in a compartment underneath the caboose. There are chains kept on the locomotive in the tank boxes.

Q. It is necessary to pack that chain from the locomotive or the caboose to the car?

A. Under certain conditions, yes, sir, it is necessary for you to carry it. There are other ways that you might be able to throw the chain off there to the bad order car and hook the chain on the car and drag the chain back. There are several tricks to handle it, but there are many cases where you have to carry the chain.

Q. Does the job of chaining two cars together consume very much time?

A. Yes, sir, I would say that after you got the brakeman there with you, which might be several car lengths from the engine or might be close to the engine, if it was close to the engine the brakeman couldn't do anything until the conductor got there to help him because it is not a one-man job.

Q. How much does a knuckle weigh?

A. There are two types on the Southern Pacific, I think it is 92 and 98 pounds or 92 and 96 pounds but this chain, [fol. 4696] I would say it is a good deal like the knuckle, when you start out to carry it, it is not too tough but the longer you go the tougher it gets and there are not I don't think two men in this room who could pick it up bodily and carry it any great distance and I would say by that that it probably weighs from 400 to five or six hundred pounds, I don't know, but they weigh plenty. They have to be to pull the train.

Q. What effect does a long train have upon the frequency of broken knuckles and broken couplers and draft gears—let me read you a statement on page 12 of State's exhibit No. 319—(reading) "Draft gears in fair to good condition are not pushed in or pulled out. They are either driven in or jerked out, both implying a severe shock." Does the length of the train have a tendency to increase that shock?

A. Yes, sir.

Q. And the fact that the shock is increased, does that have a tendency to make broken knuckles more frequent?

A. Yes.

Mr. Mason: I object to the question as calling for a conclusion of the witness without any foundation. Your Honor, he has not presented anything here except speculation, no [fol. 4697], statistics to show what the frequency may be of broken knuckles on long trains or on short ones.

Mr. Polley: He has been a conductor for twenty years and he certainly knows the operation of a train.

Mr. Mason: That doesn't qualify him to state how frequently these things occur unless he shows something more than speculation.

The Court: It is true probably, he can only testify as to his personal experience. If you will limit it to that, the objection will be overruled.

Mr. Polley:

Q. Will you limit it to your personal experience then?

A. Yes, it is just every trip with me.

Mr. Mason: You have a broken knuckle every trip?

A. No, I don't have a broken knuckle every trip but I have cars in weakened condition every trip and the weakened condition must be caused from weight or pressure or something wears that iron out. Those are things that we have to be on the lookout for due to the fact that carrying irons become worn. We have one type of car that we have more trouble with and it is a private line tank. When you run along at speed, the cutting lever on the coupler bounces [fol. 4698] up. This is a tank line, a private tank line, and are broke in two many times.

The Court: What is the name of the private tank line?

A. G. A. T. X., General American Tank Car Company.

Mr. Polley:

Q. Mr. Fail, in the operation of trains are there any provisions for the inspection of those trains? First, limit your testimony to others than the train crew.

A. The rules say that the section men and bridge repair men and all working along the track will observe the train as it goes by.

Q. Are any inspections made by car men?

A. No, not between these repairs stations, no.

Q. Are any inspections made by what are called car inspectors at terminals?

A. Oh, yes, at terminals where car inspectors are maintained, and that is Tucson, Arizona, between Yuma and El Paso.

Q. That is the only place where car inspectors are maintained?

A. Yes, that is 251 miles from Yuma to Tucson via Gila Bend, and it is 312 miles from Tucson to El Paso via Lordsburg.

[fol. 4699] Q. During the time you have been railroading for the Southern Pacific, has there been a decrease in the number of points at which car inspectors are maintained?

A. Yes, when I commenced with the Southern Pacific we had car inspectors and repair men at Deming, New Mexico, and we had them at Lordsburg, we had them at Bowie, Arizona, we had them at Gila Bend and today they have been eliminated at Deming; they have been eliminated at Bowie; they have been eliminated at Lordsburg with the exception of these three repair men; they have been eliminated at Gila Bend. I suppose that is all.

Q. Has that resulted in more responsibility being placed upon the crew?

A. Yes, sir, the train that I might be called to take out of Lordsburg eastbound could have been run from the last stop, which is San Simon, Arizona, to Lordsburg, which is 39 miles, without a stop, without anyone inspecting that train. On arrival of this train at Lordsburg the in-bound crew gets off and the out-bound crew, which would be me, takes charge. There is no switch engine located at Lordsburg and it is necessary for the brakemen to give their time to switching off cars or on cars and changing cabooses [fol. 4700] when otherwise they could be inspecting the train. As soon as this switching movement is completed, we make a hurry up effort to set the air, release it, one side of the train is pulled by the flagman and that is all of the inspection that that train possibly will get for 60 more miles which will be Deming where we stop for water.

Q. I will hand you State's exhibit No. 320 and ask you whether or not there are any rules which govern the inspection of trains by the crew?

A. Oh, yes.

Q. Particularly rule 827 and rule 828, will you just read that?

A. (Reading:) "Rule 827. The running gear, brake and draft rigging of trains must be inspected by trainmen as often and as closely as practicable when on the road. If defects be discovered they should be corrected if possible; cars unsafe to run must be set out. Special attention must be given to hot bearings. Places at which freight trains must stop for inspection, or the maximum distance a freight train may run without stopping for inspection, will be designated in the timetable."

Q. Let me ask you the question, "What is the maximum distance in the territory in which you work that the freight [fol. 4701] train may be run without inspection?"

A. Not to exceed 60 miles.

Q. Very well, proceed.

A. (Reading:) "Rule 828. Speed of a freight train must not exceed eight miles per hour for a distance sufficient to permit running inspections when starting. Trainmen must closely watch to see that brakes are released and if necessary must signal enginemen to stop if wheels are found sliding. Each trainman will be held responsible for wheels slid under that part of the train in his charge. Conductor in reporting flat wheels must give the name of trainman in charge. They must mail promptly to the superintendent a report of flat wheels discovered under the cars in their train."

Q. How does the train crew go about performing a standing inspection?

A. By walking up each side of the train, noting all moving parts on that car including the seal on the door which is very essential. The wheels, the brake beams, the journals, the flanges and the brake pistons.

Q. Do they look for anything else?

A. Well, I will say if they see all of that, no, they probably wouldn't have to look for anything else. If they see all of that it is about all they could visualize.

Q. What is a rolling or running inspection and what is its purpose?

A. There are places where we make rolling inspections on our end between El Paso and Lordsburg and I will drop from the engine to the caboose and let the train pull by. However, I am only seeing one side of that train, but where we have the third brakeman with 100 cars, possibly the

swing brakeman and I will allow the train to pull by and we will see both sides.

Q. What is the main purpose of that inspection?

A. To see that all of the brakes are released, that there are no brakes sticking, all the air brakes are operative and doing what we want them to do. Now there are places that if we continue according to this rule, according to that air brake rule there, we get to going so fast we couldn't get on them so it kind of breaks up our inspection. We will take, for instance, points like Steins. Steins pass is right on a pinnacle; Dragoon, Arizona, is likewise the same; and at Benson it is bad. If we allow that whole train to pull by us, what we are interested in is to see that that air brake [fol. 4703] is off, that there will be no brakes sticking and heating the wheels. Then if he don't set the air and he gets them to going, I mean by "he" the engineer, he gets to going so fast that the engineer has to set the air to pick us up or he would run off and leave us.

Q. What effect does that have upon your inspection?

A. He has undone it. Then if we were to carry through like the rule says, of course the rule isn't so elastic, after he sets the air we would have to stop him, go to the head end and pull that entire train by and until we got down the mountain we would be stopping him every train length anyway but we are not that technical and we take chances, we try to be good fellows with them. However, if we break a wheel, there are records where they haven't been such good fellows with us but we try to make the inspections the best way we can.

Mr. Mason: I take it that it may be understood that the witness is referring to his own personal experiences?

The Court: Yes, the record may so show.

Mr. Mason: These generalities go far beyond the limit of experience unless limited by such understanding.

[fol. 4704] Mr. Polley:

Q. Does the weight of the train and the length of the train have any effect on the ability of the engineer to control the speed of this train at eight mile an hour for the rolling inspection, especially on a descending grade?

A. That is true, because the weight is there and he cannot hold it with his independent brake valve.

Q. That requires him to do what?

A. Set the automatic air on the entire train.

Q. And that completely nullifies the rolling test?

A. That is right, it puts us in a worse shape because under this condition when we get on the caboose we are unable to determine if all the brakes are off of all the cars; we hope they are.

Q. And that was the very purpose of making the test to begin with?

A. That is right.

Q. What effect will it have if some of the brakes are sticking?

A. They will heat the wheels. If it was an empty car, it might slide the wheels from a standing start. If it was a heavy loaded car, it would heat the wheels. I don't think the brakes would be strong enough to slide the wheel from [fol. 4705] a standing start. It might be under conditions of wet rail or frosty rail.

Q. How are these inspections made at night? What light do you have?

A. We have electric lanterns that are very good for what we want them for, to give signals, but the difference between our lantern and a lantern that a car man is furnished with is that we have a little bulb about like a flashlight bulb, I believe they are four or six watt bulbs, they are just little ones and as far as our duties outside of inspecting the train they are very good. They are all right, but the car man has a reflector on his electric lantern and he has a reflector probably four or five inches across that puts a ray of light on there that you can really see something with.

Q. Mr. Fail, from your experience can you state whether or not you can inspect a 100-car train, a standing inspection, as quickly as you can a 70-car train?

A. I cannot.

Q. According to the company rules, if you were required to, could you give the 100-car train as efficient an inspection as you could the 70-car train?

[fol. 4706] A. I could in a longer period of time.

Q. Suppose they set the time, could you spend as much time on each car in the 100-car train as you could on the 70-car train?

Mr. Mason: I object to the question as based upon an assumption of facts not in evidence.

The Court: Objection sustained.

Mr. Polley: I think, if the Court please, if you will refer to exhibit No. 220 with the redispached trains the longer trains run across the state of Arizona just as fast as do the short trains.

The Court: That was redispach; no, I will sustain the objection.

Mr. Polley:

Q: Suppose, Mr. Fail, that you failed to discover a defect, what effect if any would that have upon you?

A: It has this effect, it may interfere with my future welfare in remaining in the service of the Southern Pacific Company. In one instance it did, due to a hot journal. At that time we were moving somewhere around 25 cars of cement to Phoenix, Arizona. We had a very rush message on this that it was badly needed and to not set out one of these cars without permission from the chief train dispatcher. We arrived at Rudder, New Mexico, and found [fol. 4707] this journal running warm. We doctored it up, did every known trick we are familiar with and it wouldn't respond to treatment. I talked to the chief train dispatcher four miles beyond and he told me to try to worry along with it if I could, so we operated it under water from one of these ten-gallon keeley cans, we have a hose that runs down to the journal and we arrived at a place called Cambray, New Mexico, which is 62 miles west of El Paso and we stopped this car in front of the depot and put the garden hose on this journal and cooled it off slowly and rebrassed this car. If my memcry serves, we rebrassed this car again at Parma, New Mexico, which is four miles west of Deming. However, at Deming we put the garden hose on this journal again and had it completely cold leaving there. We rebrassed it at Parma and carried this car on to Gage, New Mexico, and doctored it again at Gage. We carried it on to Separ then and at Separ it was necessary to rebrass this car as the old bearing was broken. At that point, which is an open telegraph office, the same as Deming and Cambray, New Mexico, that I was later forced to use the operators as witnesses that I had given this car attention at these points, found two car repair [fol. 4708] men at Separ with the emergency tool car and they rebrassed this car. Leaving Lordsburg I had engineer Cheek pulling me and we made it up that the train would

not be moved faster than twenty miles an hour for that twenty miles, Separ to Lordsburg, and at no point do I recall that he moved the train any faster. Arriving at the station board, which is one mile east of Lordsburg, this journal gave way and piled nine of them in the ditch and I was informed in an investigation that it was a \$27,000 wreck.

[fol. 4709] Q. Mr. Fail, going back to the inspectors now, ordinarily, is a train always stopped specifically for the purpose of making inspection, or sometimes is inspection made while the train is stopped for other purposes?

A. That is true. I will put it this way, inspections are made at all stops, and some stops are made specially to inspect the train, other stops are made to meet or allow trains to pass. However, we have a place on the east end—I mean by the east end, between Lordsburg and El Paso—that the enginemen and trainmen prefer to stop there and make an inspection because they can stop these long trains without using the automatic air-brake valve. This track lies right at the top of a hill so when we go up this hill into this place, they keep sawing off on the steam and let the train die down, and in that way we don't have to use the automatic air.

Q. Are you familiar with the length of freight cars used in Southern Pacific service now?

A. Yes, sir.

Q. What are those lengths?

A. Well, we have, I suppose, tank cars are the shortest, we have some private tanks that I would say run thirty, around thirty feet then from that on up to 65 feet 6 inches, [fol. 4710] and some of one line is 66 feet 6 inches, in freight equipment. In passenger equipment they are longer.

Q. I am speaking of freight. Does that include the over-all length, the couplers and everything?

A. No, that includes the inside length, that doesn't include the over-all length.

Q. In order to determine the over-all length, you would add to that the length of the coupler?

A. The coupler and the end sill of the end of the car that the coupler comes out of, you add that all on, which would be on some cars possibly two feet, may be a little bit longer.

Q. Now, is there any particular reason why you know the length of freight cars?

A. Yes, when I leave El Paso I am required to wire Lordsburg, New Mexico, the end of my run, and where the other crew takes charge, the number of long cars in this train, so that they can determine how many cars to give them into Arizona, providing they want to have them so they can meet or pass. I have had a train, trip before last out of El Paso, that had 18 fifty-foot cars in it, and then other trains that I handle may be three, four, five or ten, it just depends probably on what the commodity, if it were [fol. 4711] automobile parts, why, they are hauled in a special car, automobile car, and those range from 40 to 50 feet.

Q. Now, in your experience in your train operation, have you experienced any trouble with sticking triple valves?

A. Yes, sir.

Q. What happens when a triple valve sticks?

A. That sets the air brake under the car and heats the wheel, burns the brake shoes, or heats the brake shoes. I have seen cars that you didn't find in time like, well, in summer, middle summer when the weather is hot, your vision is poor and if you have one then that creeps on, a triple that creeps on, you may go a long ways before you find it.

Q. What is the effect of the heating of wheels?

A. Well, it could either cause the wheel to lock or slide or it could cause it to heat and break.

Q. And what would that cause?

A. A wreck, derailment.

Q. When you find a sticking triple valve, what do you do?

A. We usually cut the car out.

Q. And how do you do that?

[fol. 4712] A. There is a valve, the train pipe runs direct from the car, ordinarily direct, sometimes they transverse from one side to the other of the steel underbeam, but we will say that it goes in a through direction, then when this brake is set on, there is what we call a branch pipe that branches from the main train pipe and comes down to this brake cylinder that operates this brake into the triple. All right, there is a valve right here that we can turn and makes this brake inoperative and not interfere

with the flow through the car, but this valve is set down there.

Q. Then the other brakes in the train have to do the braking for that one car?

A. Yes, takes its place.

Q. Do you know how long it will take to slide a wheel flat?

A. That just depends, that would depend upon the quality, I might say, of the wheel or the texture, the hardness of the steel, the size of the rail, the weather conditions. If it was a frosty rail, it might slide quite a little ways.

Q. But, sooner or later it would become flat?

A. Yes, sir.

Q. What is the effect or result of a flat wheel?

[fol. 4713] A. Well, a flat wheel, if flat enough, will break a rail if it is allowed to turn over, if you put a flat spot on it like that, it would be questionable whether it broke itself or broke the rail, one. When that flat part came over it would be like hitting with a hammer.

Q. Do you have rules with respect to flat wheels?

A. Yes.

Q. What is that?

A. They are condemnable and removable from the car two and a half inches or over, they are condemnable, they take the wheel out.

Q. Now, when the train is moving out on the road, do trainmen have any duties to watch and inspect the train?

A. Well, that is about the main duty that they have, is to keep a continual watch out for that train, the running gear of the train, both looking back at the track after the train has passed over it to detect if beam rods or brake beams or anything of that nature is dragging, marking the ties or giving you some indication that you might be in trouble and not see it up there.

Q. Now, where does the head brakeman watch? Where does he watch from?

[fol. 4714] A. Well, he watches from the gangway of the engine providing he is up there. If warm weather, he might select a place in a low coal car where he could get down close and look along, but usually, if it is bad weather, from the gangway of the engine.

Q. And where do the other brakemen and conductor watch from?

A. Well, if you have two brakemen, they sit on each side of the cupola of the caboose and the conductor usually sits down on the cushion or at the chair at his desk, and the way I do, I raise the side windows in the caboose and look up alongside the train, I am down near, and I am in a draft where if there is any smoke coming back, scent of any kind, I can detect it.

Q. How can you detect a hotbox on the rear of a train?

A. By smell or sight only. If it blazes or is smoking, smoking in the daytime, if you are not in too dusty a country, you may see it. However, it is pretty hard in places on the district I work to see anything.

Q. Do curves have any effect upon your ability to see a hotbox?

A. They are advantages.

[fol. 4715] Q. They are?

A. Absolutely. That is where we do get a look at the train going around the curve.

Q. Do cuts have any effect?

A. No, not favorable; sometimes they do. I would put it this way, that if you had a box blazing, the blaze from the box might flare on that cut if it is a clean cut like, and dirt, a deep cut, deep enough so you could get a reflection from the hot box, yes, that would be an advantage.

Q. Does the weather have any effect upon the ability to observe?

A. Well, we don't have too much snow in this country, but if it was snowing you wouldn't be able to see anything. Our greatest difficulty over there obstructing our vision is sand.

Q. Is your ability to observe defects affected in any way by the length of the train?

A. Yes, sir, because we have places like leaving El Paso, I would say we go seven miles with a hundred car train before you see the engine. If we encounter trouble leaving El Paso, we pull out over nine public street crossings, and that is right in the heart of the city, and on the track that we go out westward on, the buildings are so close that they [fol. 4716] will barely clear a man hanging on the side of a car, you wouldn't dare hang on the side of a car going out there.

Q. Out on the road does the length of the train have any effect on your ability to see defects?

A. Yes, it is like you can tell a man at two blocks to see who he is, you can see him at three blocks, but couldn't recognize him, it goes like that, the further the vision the less—

Q. As I understand it, the head brakeman remains on the engine most of the time?

A. No, that depends upon what the duties as to making stops, meeting trains, he will allow part of his train to either pull by him when they pull in the side-track, or if the train is approaching to be met, he will stay on the engine and let the train pull by him after he has opened the switch and headed the train out again.

Q. I mean, especially when the train was in motion.

A. Well, that depends, there are times when he may, to satisfy himself, make a rolling inspection and drop off and let half the train pull by him going up a hill where the speed is slow and he is able to get back on again.

[fol. 4717] Q. Now, referring especially to defects such as hotboxes, fallen brake beams, and broken flanges, can a trainman detect these defects from the top of a freight car?

A. No, I wouldn't say that he could, but there are conditions, if you were on a curve he could probably see the rear half of his train on the running gear, but I would say that the top of a boxcar is the poorest place to try to detect any defects on a train.

Q. Do you know what slack action is?

A. Well, I have had lots of it, I don't know whether I will be able to explain it or not, but I have had plenty of it.

Q. Will you give your impression of what it is?

A. Well, it is, you may call it lost motion between the cars in the couplers, it is either retarding the speed or increasing the speed that causes slack action.

Q. Have you observed slack action during your operations?

A. Yes, sir, lots of it.

Q. Which is the most severe, the running in of slack or the running out of slack?

Mr. Mason: Just a moment, Mr. Fail. I object to the question on the ground that the witness is not properly [fol. 4718] qualified. He has never, so far as his qualifi-

cations go to show; made any measurements, he hasn't even discussed any familiarity with slack running out.

Q. Have you ever measured the severity of the shock, Mr. Fail, in a run-out of slack?

A. Technically, no. The only thing I can speak of is from experience.

Q. And you never measured the severity of the shock from a run-in of slack, have you?

A. I wouldn't have any way to determine.

Q. You have never had a casualty of any kind in your own experience, from a run-in or run-out of slack?

A. Yes, I have had plenty of them.

Q. You have yourself?

A. Yes.

The Court: We are probably now getting into cross-examination.

Mr. Mason: I was trying to determine his qualifications. I will stand on the objection.

The Court: If the witness is qualified from his own experience, the objection is overruled.

Mr. Mason: There is a question before you to be answered.

Mr. Polley: Will you read the question?

[fol. 47f9] (The question was read by the reporter.)

A. I would be unable to determine which might be the worst, they are both bad at certain points. If, as a general thing, I had to state which could be the worst, then I would state that the run-in was the worst, but we have two places on that particular district, and four or five places between El Paso and Yuma, Arizona, where the slack cannot be controlled.

Mr. Polley: Now, in that connection, have you had any experience in or around Pronto, New Mexico, with slack action?

A. Yes, sir, that is one of the places that I had in mind that the slack cannot be controlled, regardless of how hard the engineer tries to save you. Pronto, New Mexico, is located on, you might say, a pinnacle, a hump, or what we call a hog-back. Going eastward on these trains, before the engine is able to get over the hill, the rear end of the train is going downhill, so that there is no way to know if a man wasn't acquainted with the territory where this

thing is going to happen, but we have all been over there so long, different length trains give different points at which the slack action will go in or where it will run out, but the thing in this matter is, that the locomotive up there [fol. 4720] weighs several thousand pounds, and it is still going up hill, and it is still pulling too, but the momentum of these cars gets going so fast that they get to going faster than the locomotive, your engine may be up on the top of the hill and the engineer is working the steam now trying to out-run that slack, keep away from it, but he can't do it, and the rear end will just hit it, and if you haven't a hold you will go to the front end of the caboose or thereabouts if the stove don't stop you, then he gets over the pinnacle and starts on down the hill and just as soon as that rear end comes up, down the hill the caboose goes in. I didn't mention that when he gets on the hill in the first part of this movement, the slack works back to you until you get this jerk, this pulling effect, and it is just about as bad as the other one at this point, I wouldn't be able to determine which one would be the worst.

Q. At any rate, in some territories, slack action is more severe than in other territories?

A. That is right.

Mr. Polley: I was going to take on a different angle here.

The Court: Well, the court will be at recess until two o'clock.

(Thereupon the court stood at recess until April 15, 1941, at two o'clock, P. M.)

[fol. 4721]

2 P. M., April 15, 1941.

All parties being present as heretofore noted, proceedings were resumed as follows:

The Court: You may proceed.

Louis A. FAIL resumed the witness stand.

Mr. Polley:

Q. Mr. Fail, just before the noon recess you testified that slack action is more severe in some territory than in others. What effect does slack action have on a train operating over hogbacks?

A. Those are the places that no one is able to control the slack regardless of what efforts the engineer puts forth. He cannot get away from the slam-bang in the caboose or at the end of that train.

Q. I want to read you an excerpt from page 16 of State's exhibit No. 152 and see whether or not you agree with that statement, "the difference in grade over which the train may be passing when the brakes are applied, for example, one portion of the train may be on an ascending grade when the grade would assist the brakes in stopping the cars, and another portion of the train may be on a descending grade, in which case the grade would oppose [fol. 4722] the effort of the brakes to stop the cars. Such a condition requires care and judgment on the part of the enginemen as regards the time and manner of operating the train to prevent as far as possible severe shocks and strains due to the action of the slack in the train." Now from your experience, can you say whether that statement is correct?

A. Yes, that is absolutely correct, but that is for general conditions or places that you would encounter in your trip or tour, but I speak of places like Pronto that are exceptions to the rule. Pronto and between Kenzin and Anapra on the west end down here at Ligurta, Arizona, and there are other places that are exceptions to the rule. That is a general way of handling it in your line of tour, but there are places like Pronto that it cannot be controlled.

Q. What effect does the speed of the train have on the severity of slack action?

A. The speed, if you can continue fast enough to keep that locomotive going and keep it running away from this train, you wouldn't have any run-in because it would get out of the way, but the momentum of the cars catches up with the engine and if you try to run the locomotive so fast [fol. 4723] to keep away from that slack then you would be exceeding the speed limit.

Q. Suppose on the running inspection that you testified about this morning when the engine pulled the cars by at about eight miles an hour, suppose the engineer threw it into emergency going at that speed, what effect would that have upon the rear end of the train?

A. I wish you would state the question again.

The Court: Read the question.

(The question was read by the reporter.)

A. I would say at eight miles an hour it would be just like an explosion, that is about as near as I can describe it because at eight miles an hour it would be instant. The slower the speed the quicker the stop and the harder and rougher the stop, and if he threw it into emergency going eight miles an hour I am pretty sure he would damage anything.

Q. I will ask you if that situation is explained by this rule, page 13 of exhibit No. 319, "It is undesirable to make a heavy initial reduction of low speed due to the high brake shoe friction and to the more rapid application of the head brakes than those at the rear." Is that why there is a severe shock?

[fol. 4724] A. Yes, I should think so, but most any application, if it is quick action desired that the engineer wants at such a low rate of speed, it will be plenty bad.

Q. Mr. Eail, how does the train crew protect itself against slack action?

A. If they are in the cupola, we have a lazy board that is probably in some cabooses, it is eighteen or twenty inches wide, in my caboose No. 234 it is about twenty inches wide and we have a cushion that is probably eighteen inches wide. We have a three by ten inch oak block and it is probably twenty-four inches long. The cushion is a little bit longer than this lazy board that we sit on. We have this block to put our feet against which gives us about a foot or ten or twelve inches space so that we can block ourselves good. We have a grab iron on the side of the cupola, we have an iron rod that goes through the cupola. We are able to get hold of these and prop our feet like that and take it sometimes. Other times if the action comes from an undesired emergency of any nature where we are not expecting it then it is a scramble and we are liable to be knocked out of the cupola.

Q. Usually do you have any warning of impending [fol. 4725] slack action?

A. None. A stranger, regardless of the amount of experience he has had, can ride over my district and get injured because you must learn these places.

Q. Are there any dangers in slack action? I am referring to dangers to the train crew?

A. It hasn't been very long ago that I was skidded about sixteen feet in the caboose, on the floor, and I don't know whether that place is healed yet or not, but I might be able to show it if there is any question arises, but that was from slack action. We had a long train and I had been checking over the orders and schedules of another train, in fact I had just got to it. I thought I was getting in the location where I should take hold and hold on but my mind was on other things.

Q. You have made many trips across your territory during the last several years, have you not?

A. Yes, sir, I would say in the neighborhood of four thousand miles a month.

Q. Has any official of the company ever ridden with you in the caboose on a ninety to one hundred car train?

A. Not to my knowledge, not that long. I have had them in the caboose with work trains and short trains. I have [fol. 4726] personally invited different ones to ride the caboose with me but on these long trains they kind of laugh and in a joking way say, "Well, I believe I will ride the engine, I don't believe I will ride back there with you."

Q. Have you in your railroad experience ever experienced a reportable injury as a result of slack action? You understand what I mean by a reportable injury, I am referring to the Interstate Commerce Commission rules.

A. We are getting into deep water on that because there have been hundreds of scratches and bruises that haven't been reported. I will tell you why we don't report them.

Mr. Mason: I object to the statement of the witness, the question is plain and simple and demands a plain and simple answer. The rest of it is all volunteered. He can either say he has suffered a reportable injury or he has not.

The Court: I will sustain the objection on the ground it is voluntary.

Mr. Polley:

Q. To get back to reportable accidents, have you ever had any yourself?

A. At Columbus, New Mexico, I think about 1933 or 1934 I was moving one hundred condemned cars from El Paso to Hachita to store them and an air hose blew off some [fol. 4727] where about the twelfth or fifteenth car from the engine. We were going slowly up this hill just leaving

Columbus, New Mexico, when this happened. I was in front of the swing brakeman, sitting in the cupola cross-wise with my side to the front window when this happened and it threw the swing brakeman against me hard enough to break two ribs, I think it was, and my spectacles. I don't recall what time I lost but I do recall that the company paid for repairing my glasses. That is the way I remember that trip.

Q. About what speed was that train making?

A. I don't believe over ten miles an hour, not fast.

Q. Was that the only reportable accident you have had as a result of slack action?

A. I am satisfied there have been many others but as I started to say a moment ago there are many slight injuries that are not reported.

Q. Have you seen other members of the crew injured as the result of slack action?

A. Yes, sir, from these slight injuries that we are slammed around in the caboose, we don't report them unless someone is injured so that he is going to lose time, because here a few short years ago, and I think some of the officials, [fol. 4728] still practice the thought in this matter, that if you are injured, instead of a reportable injury then there must be man failure and we must find the fault that caused you to be injured and you receive discipline. That has been done here on this Tucson-Rio Grande division.

[fol. 4729] Q. Have you ever seen objects in the caboose dislocated?

A. Yes, sir; I have had the water barrels knocked down, and that has not happened so long ago, I would say, within the past ninety days, and I have seen the stove knocked over, which is bolted to the floor with two quarter-inch rods, one on each side of the stove. I have skidded on a cushion the length of the locker, possibly 12 feet, many times, I have been knocked over out of the chair as I sat sideways to the end of the caboose when I am doing my clerical work, and when we have undesired action of the automatic brake, either intentional or unintentional, I am due for a slam if it is at a place that I am not expecting slack action.

Q. Have you yourself experienced or seen any other members of the crew hurt fairly severely without causing them to lose three days?

A. Oh, yes, I have seen them, plenty of them, that have been braking on with me knocked from the cupola to the

floor, but I couldn't give you the dates. If he is able to walk and live, we don't want to report it, because at the end of our run we don't want to be called to the train-master's office and grilled for a statement and sacrifice one [fol. 4730] hour or two hours or three hours of our time, we would rather skip it if he is not injured too bad.

Q. Have you seen damage done to the equipment as the result of slack action that didn't amount to \$150?

A. Oh, yes.

Q. Was it considerably damaged?

A. Well, I don't know what goes on inside of those cars, but I am satisfied that there must be plenty of damage to the commodity in the car to withstand that shock, the commodity couldn't be braced against such terrific impacts as that.

Q. From your experience, what effect would you say the continual fear of slack action has on the health of trainmen?

Mr. Mason: I object to the question. There has been no showing that this witness has any particular fear of slack action.

The Court: Well, the Court will make the same ruling as heretofore. If the witness will limit it to his own experience, the objection will be overruled.

A. To my own experience, I make several trips—

Mr. Mason: I take it, the question is as to the effect on his health, the question will be understood as limited to [fol. 4731] any effects on his health. It is a pity that we cannot incorporate him in the record as an exhibit, then we would have it answered.

The Court: Go ahead.

A. I have rode these long trains and had different trips and be worked up to such a nervous state that I wasn't even hungry, go to bed without eating.

Q. Now, what is the effect of slack action on equipment? Does it weaken it if it does not break it?

A. It is bound to weaken it, and many times these cars come to us through interchange of other railroads that are, I might say, not condemnable to put them on the rip track to delay the load to make the repair, they are not in that bad a state, but they show signs of being roughly handled.

Mr. Mason: Now, I suggest, if your Honor please, that the witness is in no position to say that the damage done on another railroad is because of slack action or because of contacts while switching one or two cars. Unless he is able to qualify, I object to any further testimony along this line.

The Court: Yes, the objection is sustained.

[fol. 4732] Mr. Polley: Has the length of a train or the number of cars in a train any relation to slack action?

A. Yes, sir.

Q. And what?

A. It is the weight behind that in these run-ins or these run-outs, it is the strain that is placed upon those springs and draft riggings and the severe slack action of shoving in or jerking out is bound to wear the plates that hold this draft gear within the steel beam at the end of the car that carries the coupler, and that was what I intended to say, that some of these cars have more slack action than other cars, because they are worn when they come to us, when we get hold of them, and some of these cars, you take the new car, the new automobile, the new equipment that the company has been buying, there isn't a lot of loose lost slack action in that car, we will say possibly three inches to the drawbar or six inches to the coupler between the two cars would cover it all, but it is these old cars that come to us that have been in service for years that I will say that some of these cars—and I want you to know that I have measured some, and I am here to state that some of these old cars have as much as six inches lost motion in [fol. 4733] the drawbar.

Q. Do your rules require that certain commodities be placed in a particular part of the train?

A. Yes, sir.

Q. Will you just go ahead and explain that, what those rules are?

A. Livestock, we are required to carry all livestock on the head end of the train, and if we have some commodity that is bulky, we will say, like oil well machinery, we always carry that on the head end next to the engine, and anything of a fragile nature that can't take it, is to be carried on the head end. Now, bananas, we carry bananas next to the caboose for the convenience of the banana messenger to regulate the ventilators, he accompanies that

shipment so that the bananas won't be chilled or they will arrive in perfect order.

Q. Now, referring to the rule on livestock, when did this rule go into effect, if you remember?

A. I would say that it was after 1923; it was after we started to pulling the big trains on the east end over there, and I don't recall just what year it was, but after they started pulling big trains, why, they forbid us to put live- [fol. 4734] stock on the rear end of them, they were to be carried next to the engine.

Q. Prior to that time they did carry livestock on the rear end of the train?

A. Yes, sir; we have had wooden underframe stock cars, and any time that any cattle was loaded in the wooden underframe cars, which were many at that time, they would go ahead of the caboose.

Q. Now, are cattle shipments accompanied by a caretaker?

A. Sometimes, and sometimes not.

Q. When they are, where does he ride?

A. In the caboose.

Q. Wouldn't it be more convenient if the cattle cars were placed next to the caboose?

A. It would be more convenient for him, but pretty rough ride for the cattle. They might be knocked down going over these hogbacks from slack action, and I have seen it where one gets knocked down and the next one falls over him, and it isn't but a short time until you have five or six piled up.

Q. Do you have a card in your hand entitled, "Warning To Caretakers and Others?"

A. Yes, sir.

Mr. Polley: We ask that this be marked for identification [fol. 4735].

The Court: It may be marked.

The Clerk: Plaintiff's Exhibit No. 325 for identification.

Mr. Polley: And where did you get that?

A. Those cards are nailed up in all cabooses on my district.

Q. Do you know their purpose?

A. They are warning to stockmen and caretakers of any nature, to be careful.

Mr. Polley: We offer the card in evidence.

Mr. Mason: I would like to inquire about it.

Q. You say that this card, Exhibit No. 326 for identification, is in your cabooses?

A. Yes, in all cabooses in the El Paso-Lordsburg District.

Q. This card purports to be issued by the Southern Pacific lines in Texas and Louisiana. You are not employed by them, are you?

A. I am employed by the Southern Pacific.

Q. This card is on the train, whether it consists of thirty cars or forty cars, or any number?

A. It is standard equipment on all cabooses between El Paso and Lordsburg.

Q. Do you know whether it is used in Arizona or not? [fol. 4736] A. I couldn't say that; I haven't been in Arizona since 1927, I think, in freight service.

The Court: I take it that you are now engaged exclusively in the freight service, rather than passenger?

A. Well, I am getting to the age where I am doing a little bit of passenger work too. This November, I will have thirty years.

Q. But the majority of your work is with freight trains?

A. Yes, sir; I have made about six trips, I guess, since the first of the year, to Tucson in passenger service.

The Court: You offer this in evidence?

Mr. Polley: Yes.

Mr. Mason: I take it that counsel will supply us with photostatic copies?

Mr. Polley: Well, the witness testified they are in each caboose.

The Court: Well, it may be admitted in evidence.

Mr. Mason: I object to it; I don't see its materiality. Furthermore, it is not a publication issued by the defendants, it is not an admission against interest of the defendant, I don't see its materiality in any event.

[fol. 4737] The Court: The objection will be overruled. It may be admitted in evidence.

(The document referred to was received in evidence and marked, "Plaintiff's Exhibit No. 326.")

Mr. Polley: Will you take Exhibit 326 and just read it into the record, please?

The Court: It is already in the record. I don't think you need to read it in.

Mr. Mason: If it is read, then we can have the exhibit withdrawn.

The Court: All right, read it into the record then.

The Witness: This is starting with "Warning,"

Mr. Mason: Couldn't we just have it copied by the reporter. I have seen it.

The Court: May the Court see it?

Mr. Strouss: Let the Court see it. (Hands the card to the Court.)

The Court: Thank you.

(Plaintiff's Exhibit No. 326 reads as follows: "Warning to Caretakers and Others. A freight train may start or stop suddenly at any time. Guard against falling or being thrown over or between cars. Avoid stopping on uncoupling lever as a break in two of train may be caused. Failure in either case may result in your injury or death. [fol. 4738] Southern Pacific Lines In Texas and Louisiana.")

Mr. Polley: In your operations, Mr. Fair, do you come in contact with trespassers upon your trains?

A. Yes, sir.

Q. What do you mean by trespassers?

A. Men, women and children, and babies, riding these trains, these freight trains.

Q. Commonly known as hoboes?

A. Yes, sir, unauthorized passengers.

Q. Do they present any problem to the trainmen?

A. Yes, sir, one of our greatest problems.

Q. Will you go ahead and elaborate on that, please?

Mr. Mason: Can't we proceed by question and answer instead of putting the witness in gear and letting him roll down hill?

Mr. Polley: The witness knows more about this than I do.

Mr. Mason: It places the opposing counsel in an unfair position. We have no opportunity to object to volunteered statements.

The Court: That is true.

Mr. Strouss: He is asked to state what the problems are.

The Court: Counsel said, go ahead and elaborate. Well, [fol. 4739] I will overrule the objection. Go ahead.

Mr. Mason: Perhaps I could have a running objection to all of this on the ground that it is certainly hardly to be contended that the Arizona Train Limit law was enacted for the benefit of trespassers, and that the whole subject is immaterial and irrelevant. Now, if it be relevant as to the safety of trainmen, of course, that may be developed in the course of the testimony, but in so far as it purports to relate to the safety of trespassers, I object to it on the ground it is immaterial and irrelevant.

The Court: Well, I think your objection is good if the purpose of it was to show the danger to these trespassers, but I take it that that is not the only angle of this. Hence, the record may show your running objection and it is overruled. Go ahead.

A. The dangers are to the trainmen employed on these trains when they climb around on these cars and step on cutting levers and board the train and gives that undesired quick stop that we are unable to anticipate and we are off balance, we are off watch, and it is due to the fact that these fellows will get on the train and not sit down and be [fol. 4740] seated and just ride, they are continuously walking around looking for a better place to ride; maybe it is cool and he is trying to get out of the wind or something, and he steps over the train and steps on a cutting lever. Due to the long trains, we cannot get them all bunched and quieted and keep them from running around, and that is the danger of the thing.

Mr. Polley: If you remove them from one part of the train, do they stay off?

A. No, sir, you can't keep them off; they will get back on some place.

Q. Well, as the length of the train increases, what about this problem of handling trespassers?

A. Well, it is just more than we can take care of, and the company doesn't offer us any help through the police department in helping rid the trains of hoboes. We have a rule in the book of rules that we will rid the train of hoboes. We can't. The company realizes that they can't, because they have started it at different times, and they found out they made a failure of it in El Paso, and they just can't keep them off, and they quit trying.

[fol. 4741] Q. Now is it ever necessary for the train crew on the rear end of the train to communicate with the engineer?

A. When you get too far away from him; he cannot see you.

Q. Is it ever necessary that you do pass a signal from the rear end of the train to the engineer?

A. Yes, sir.

Q. Do you have any phone system?

A. No, sir, we have signals that we give him for different things.

Q. Just what are those signals?

A. It could be a back-up signal, a high ball, a proceed signal; it could be call in the flag or whistle out the flag; it could be most anything you want him to do, you can communicate with him.

Q. Just how do you communicate with him?

A. By hand signals or lamp signals.

Q. Let's confine it first to the daytime?

A. It would be with hand signals, with a piece of paper, your hat or a broom or any object that is big enough so he can see you. He couldn't see your bare hand back there, he couldn't recognize any kind of signal you would make with your bare hand. I don't say that he couldn't but I doubt [fol. 4742] very much if he could recognize your signal 70 car lengths away. You take your glove or something that wiggles or waves and make the signal to him so he can see it.

Q. In the daytime that is the only method you have of signalling the engineer from the rear of the train?

A. That is right.

Q. And at night?

A. We have fusees, it makes a red flare or if you are up closer you can give him a lantern signal.

Q. If the signal to stop cannot be seen by the engineer or if he does not respond to it, what does the conductor do?

A. He pulls the air with the conductor's valve, that is opening the air pipe at the rear of the train.

The Court: That makes an emergency application. What I am getting at, can any skill be exercised in the application of that conductor's valve so as to lessen the shock?

A. Sometimes, your Honor, I think I have skill and the next time I don't do so good, but I try to use skill. I do my best to do it but I don't do it according to the rule. It is due [fol. 4743] to the lack of courage on my part that I don't do it according to the rule and I quote you—

Mr. Polley (Interrupting): What rule is that?

A. Rule 16 in the air brake rules and it instructs the conductor, "When there is immediate danger to life or property the valve must be opened suddenly to full extent and left in that position until train stops, then closed," and I have had thirty years' experience and I am afraid to do that. I have never done that.

Q. Why?

A. I can't get propped good enough where this valve is to hold on tight enough as to what might happen and I don't do that and I don't think anyone else ever does.

Q. Is the operation of the conductor's valve a safe operation ordinarily?

A. Ordinarily, yes, sir. I have opened it many and many a time and never been hurt but I don't jerk it open like that rule says.

Q. I don't believe you have completely answered the Court's question. Will you read it back, please?

(The Court's question was read by the reporter as follows:

"That makes an emergency application. What I am getting [fol. 4744] at, can any skill be exercised in the application of that conductor's valve so as to lessen the shock?")

A. I would say that the easier that you pull this conductor's valve the less chance of a severe shock.

Mr. Strouss: May I ask the witness a question?

The Court: Yes.

Mr. Strouss:

Q. Mr. Fail, in reading that part of the rule to the court that reads, "When there is immediate danger to life or property the valve must be opened wide," of course you don't mean by that to say that in every instance where it is necessary to stop the train that the rule would require that you open the valve wide?

A. No, and it wouldn't mean there is life in danger every time I pull that conductor's valve either.

Mr. Strouss: This rule continues, "When it is imperative that the train be stopped within a reasonable distance, for example when a hotbox is noted and a stop signal cannot be transmitted to the enginemen, the valve must be opened gradually," under those circumstances you wouldn't be required to open it wide?

A. No.

[fol. 4745] Mr. Strouss: Then I think the answer to the Court's question, I think that is what the question was referring to.

A. My method of opening it would be to open it and let it blow off about ten pounds. Then after I detect and felt I had all brakes of the train in an operative position, then it wouldn't make any difference what I did to it, if I have them all set, but not jerk it wide open.

Mr. Strouss: That is what the Court had in mind?

The Court: Yes.

Mr. Polley:

Q. Have you ever experienced delay at short sidings with long trains?

A. Yes, sir.

Q. How did that delay come about?

A. Well, we have between El Paso and Lordsburg 149 miles westbound and we have one sidetrack—these sidetracks are 108 car sidings, I think, 108 or 110 and they begin at Lanark, Afton, Chappel, Akela, Deming, Mongola, Separ between El Paso and Lordsburg, and if you are not able to make these stations with these long sidings, some are three or four stations apart, and if you cannot go from one long sidetrack to the next then you are held at this first one to meet two, three or four trains. I have met that [fol. 4746] many and more at these long sidetracks. In other words, the dispatcher puts you in the hole, in the clear out of the way and lets the fleet go until things clear up. You get message right along not to saw this passenger train or "don't saw this freight train." By a "saw" I mean you have 100 cars would be in this sidetrack and you have 30 sticking out here at the back end. To meet the passenger train you let him in the pocket, then you pull up and pull those 30 cars into the sidetrack and let that train go. If your head rights won't permit you to continue on the trip and you are to meet somebody else there, then it is necessary to open this switch and back those 30 out again and get the track set for the other fellow to come and get into the pocket and we pull around him and let him go. We have done that with trains in both directions many times.

Q. Does that operation take time?

A. Yes, sir. I would say that the nearest you can do it in would be about six minutes, to clear a train from the

time you flag him at the far end to get him into this pocket, to saw him by, about six minutes.

Mr. Polley: Your witness.

Mr. Mason: I could ask him a lot of questions this afternoon [fol. 4747] but I think it would save time probably if we could postpone the cross-examination until tomorrow morning.

The Court: Very well, you may step aside. Call the next witness.

A. T. Ash was called as a witness in behalf of the plaintiff and being first duly sworn testified as follows:

Direct examination.

By Mr. Polley:

Q. Will you state your name, please?

A. A. T. Ash.

Q. Your address?

A. El Paso.

Q. You are employed by the Southern Pacific?

A. Yes, sir.

Q. In what capacity?

A. Freight conductor.

Q. What has been your experience in railroading?

A. A little over thirty-nine years in train and yard service, the last twenty-eight years practically all in freight service.

[fol. 4748] Q. You have been both a brakeman and a conductor?

A. Yes, sir.

Q. Do you have a regular run as a conductor now?

A. Yes, sir.

Q. How long have you had such run?

A. About a year I guess, this particular time, or a good many years—I have been promoted at different intervals—I first had a regular turn over twenty odd years.

Q. Over what territory do you now work?

A. Between El Paso, Texas, and Lordsburg, New Mexico.

Q. Over what territory of the Southern Pacific Company have you worked?

A. I have worked over all their territory between El Paso and Tucson, both lines, with the exception of the Globe branch.

Q. Have you worked west of Tucson?

A. Not in many years. I have worked out of Tucson, between Tucson and Gila, in 1909 but only for a short time. I went in the main yard service here in Tucson.

Q. What length of freight trains have you worked on?

A. All lengths from a few cars and caboose up to 100, 128 [fol. 4749] I believe.

Q. Have you worked on very many trains in excess of 85 cars?

A. Yes, we handle now frequently trains of 100 cars.

Q. Do you work in both passenger and freight service?

A. Yes, sir, I do some extra passenger work.

Q. Have you for some time?

A. Yes, for the last ten or twelve years I have done considerable passenger work.

Q. Are you familiar with the rules of the Southern Pacific Company relative to the duties of trainmen, brakemen and conductors?

A. I am.

Q. Are you required to take examinations on those rules?

A. Yes, sir.

Q. Were you in the courtroom this morning?

A. Yes, sir.

Q. Did you hear Mr. L. A. Fail testify concerning the duties of a freight brakeman?

A. I did.

Q. Can you state whether or not his testimony was true and correct from your experience?

A. Substantially correct insofar as the duties of a freight [fol. 4750] brakeman are concerned.

Q. Did you hear him testify concerning the duties of freight conductors?

A. I did.

Q. Do you know whether or not he correctly detailed those duties?

A. I think he detailed them about as clearly as anyone could.

Q. Did you hear him testify as to the procedure of re-brassing journals?

A. I did.

Q. Was his explanation true and correct as far as you know?

A. Yes, sir, I would say so from the experience I have had with the same type of work.

Q. Did you hear him testify as to the repairing of knuckles on the road?

A. I did.

Q. Was that explanation true and correct?

A. Yes, sir.

Q. What effect does the number of cars have upon the necessity to replace journal brasses?

A. Each car has a certain amount of length, a certain length, and as the cars are added it increases the responsibilities and the difficulties in performing that service.

[fol. 4751] Q. What causes the necessity of replacement of journal brasses?

A. Many things. The principal thing is the lack of lubrication. Friction is what causes hotboxes and when they are properly lubricated you seldom have hot journals.

Q. Is it more difficult to locate and detect hotboxes on long trains than it is on short trains?

A. Yes, sir, the further away the object is from you the harder it is to detect, either by sight or by smelling hot metal or the hot oil, whichever the case may be.

Q. If a hotbox is detected sometimes can it be fixed so it does not result in a bad journal?

A. Oh, yes, if you catch it in time you can often correct it by repacking it, seeing that it is properly lubricated and handle your car into your terminal without brassing it, but if it goes too long and the babbitt is melted down out of your journal bearing, your brass, then there is only one thing to do and that is rebrass the car.

Q. And that takes time?

A. It takes time and effort, yes, sir.

Q. Did you hear Mr. Fail explain how cars are chained together when there is something wrong with the draft gears or knuckles or couplers?

[fol. 4752] A. Yes, sir, I did.

Q. Was that a fair account of that?

A. I think he gave a very fair explicit definition of the procedure in chaining up cars which had damaged draw bars, broken knuckles, and so forth.

Q. Do you agree with his statement as to the method in which freight trains are inspected by train crews?

Mr. Mason: Your Honor, all these questions are very leading. It is simply an adoption of the other man's testimony and it seems if we are going to continue all we need to do with Mr. Ash is to say that he adopts Mr. Fail's testimony on direct and cross-examination and we can excuse him.

The Court: I think counsel had in mind the same thing the Court has, certainly we need not go over the detailed operation with each of these witnesses. It is purely cumulative. I will overrule the objection.

Mr. Mason: My objection is that the questions are highly leading and suggestive. After all, the witness probably has some words of his own which he could use if given the opportunity.

The Court: Read the last question.

(The question was read by the reporter.)

[fol. 4753] The Court: The objection is overruled.

A. I do with one exception. The general inspection of the train, Mr. Fail detailed the objects he is apt to find defective such as the draft gear, brake beams and flanges, and so forth—strike the draft gear, please, that is what he overlooked, I got it in the wrong place—he overlooked the draft gear which is one of the most important things of an inspection of a freight train. There are many things in connection with the draw bar draft gear of a car that can go wrong that cause you untold trouble on these big trains, such as the carrying iron coming down—

The Court: Are you speaking of the inspection that the trainmen make?

A. Yes, sir, that we make ourselves at inspection points, and I just wanted to have this draw bar gear in the record as being one of the important factors of the procedure, because lots of times the draw bar itself is in place but the iron that holds it up to the belly of the car comes loose and lets it drop down and uncouples you which causes a severe slack action and damage to equipment and creates a hazard for those operating the train.

Mr. Polley:

Q. Have you experienced any difficulty or trouble with [fol. 4754] sticking triple valves?

A. Yes, I have.

Q. Do you have that trouble very often?

A. Not on reasonable trains but long trains often, when the brakes are set and you have trouble in releasing them. One car or two out of 100 will refuse to operate after you get back, you find them on the rear end, after you get back past a certain number of cars.

Q. Is it more difficult to detect a sticking triple on a long train than on a short one?

A. It would depend which end of the train it was on, the further any object is from you the harder it is to detect of course, like a hotbox or smoke from the wheels. If it is close to you, you can see it more readily than you can if it is further from you.

Q. Would it take more time to inspect a 100-car train than it would to inspect a 70-car train?

A. Yes, sir, it takes a certain amount of time to inspect each car; as you add the cars you add the time.

Q. Do you know what slack action is?

A. I know what it is, yes, sir. My years of experience have taught me what slack action is but explaining it in the professional language, I don't know that I can do that. All [fol. 4755] I know is what I have learned by my experience, but slack action as I view it is the slowing up of one portion of the train while the other portion is still traveling at a high rate of speed. For instance, this is a run-in and you get the same slack action when the head end increases and the hind end slows up, you get what we call a run-out. One is equally as bad as the other.

Q. How do the trainmen protect themselves against slack action?

A. We attempt to keep in a position properly braced and holding on to where you can protect yourself against injuries. When that occurs, if you know when it is coming of course a man can protect himself against severe slack action, but if it is unexpected then he is bound to get slammed if he is not prepared against something, whatever is in front of him, whether it be the stove or table or desk or partition, sometimes the end of the caboose.

Q. Have you in your railroading experience ever suffered any injury as a result of slack action?

A. I have suffered injuries and many of them and got marks on me like any other trainman. I have notations of a [fol. 4756] few slack action accidents I have been involved in.

Q. I want first just the slack action accidents in which you suffered an injury?

A. At Rodeo, New Mexico, on September 26, 1926, I was on a train of 70 cars consisting of 40 cars of cattle and 30 P. F. K. refrigerator cars. We pulled into the sidetrack to meet a train and as the stop was made on this sidetrack we had an undesired emergency and at that time I was on the back platform of the caboose and my weight against the handrail across the end of the caboose. The shock was so great that my weight bent that grab iron into the end of the caboose where it had to be straightened out, and killed 65 head of these cattle that we were handling on the hind end of the train at that time contrary to the rule. And I have the mark on my leg yet that shows the blood vessels as they will in your flesh when they are broken.

Q. Have you suffered other injuries as the result of slack action?

A. I was knocked out of the cupola coming into this town, I don't have that date but it is a matter of record in the company's office.

Mr. Mason: Have you the year?

[fol. 4757] A. It was somewhere near this time, it was the same crew I was working with at Rodeo. An undesired emergency of a train of refrigerator cars, it knocked me out of the cupola and as I hit the floor I went over the top of the stove; the other brakeman out of the other side came down and landed right on top of me. It threw the conductor down out of his chair, knocking a couple of teeth out against the end of the car. That was conductor R. A. Powers.

Mr. Polley:

Q. What was the length of that train?

A. That was a 70-car train.

The Court: We will take our mid-afternoon recess at this time.

(Thereupon a short recess was taken, after which proceedings were resumed as follows.)

[fol. 4758] The Court: You may proceed.

Mr. Polley: Mr. Ash, do you know of any other accidents caused by slack action in which trainmen were injured in which you were involved?

The Court: In which he was injured?

Mr. Polley: Other trainmen.

Mr. Mason: Where he was personally present, you mean?

Mr. Polley: Where he was personally present.

A. Yes, I have two that happened coming into the Tucson yard here, where Conductor Preston, when I was a member of the crew and present on September 26, 1926, the train consisting of 70 cars, Conductor W. H. Preston had stepped out on the back end of the caboose to hand off the switch list at the east end of the yard, which is one of the regular routines of his duties; I was just climbing on top of the car ahead of the caboose to set the brakes, the drawbar key worked out of the head car in the train, and gave it enough slack to separate the air hose, which gave us an undesirable emergency and the worst you can get; we were going at a very low rate of speed, possibly six or eight miles an hour, the impact was so great on the rear end, that it threw Conductor Preston's cheek against the corner of the caboose, and [fol. 4759] cut a gash in his cheek that laid him up some 60 days, he didn't return to the crew until some time in November. It severed the nerves in his cheek and he is twitching from that today. I was on top of a Rock Island automobile car, 50 foot car ahead of the caboose. It threw me over on the next car, but I was able to bounce and slide and I fortunately didn't get injured. J. W. Rhodes, the other brakeman, was standing behind the cupola that holds the rail in the cupola and it threw him clear over it, his hold saved him from any severe injuries. However, it did injure the special agent who was riding with us, Mr. Patterson, slatnmed him, it threw him off the cushion he was lying on against the partition and injured him to some extent, not as bad as Mr. Preston was injured. This shock knocked Conductor Preston unconscious and threw him to the ground. I helped pick him up and put him in the caboose. Now, that train was never really parted, except the train line itself.

Q. Is there a valve in the caboose called the conductor's valve?

A. Yes, sir.

Q. Are you familiar with its operation?

A. I am.

[fol. 4760] Q. When is it used?

A. In an emergency. It is more or less called a conductor's valve, but it is used as a last resort in emergency.

Q. And when it is applied or used, what does that do to the brakes?

A. It sets the brakes the same as the engineman sets them only more severe, you don't have the equipment there to do but one thing, that is to set the brakes, he can set them more gradually than you can. It has practically the same effect as far as slack action is concerned when it is set from the rear as an undesired emergency has setting the brakes from the engine.

Q. Do you know of any incident in which you were present and participated when the conductor's valve was used?

A. Yes.

Q. And one of the enginemen was injured?

A. I do. On September 7, 1925, I pulled the air on a 70-car train by opening the conductor's valve in the caboose backing into the Tucson yard here to keep from running into cars that were being shifted back and forth on the lead, which is across the track we were using, and in doing that the shock was so severe it threw the engineer against the [fol. 4761] back of the cab as he had just looked around for a signal, and knocked five of his teeth out. That was Engineer F. E. Riley.

Mr. Mason: That was in 1925?

A. Yes, sir, September 7th. Of course, those teeth never grew back. The company replaced the man's teeth, that is, they had a bridge put in for him, which was the next best thing to repair the job.

Mr. Polley: Now, as I understand, that is all of the accidents you know of as a result of slack action in the class that were reportable?

A. Those were the ones that I have been personally involved in, yes, sir.

Q. Have you seen other members of the crew knocked around and bruised in the caboose when the accident wasn't reported?

A. Yes, a number of those. Those happen frequently; I have been knocked around myself recently and made no report of it, just healed up this arm now, but I made no report of it, that is the easier way out, the arm gets well, in this case nothing was said about it.

Q. Is that a common practice of trainmen to not report those?

Mr. Mason: I object to that; it is again apparently here—
[fol. 4762] say.

Mr. Polley: He knows—

The Court: Well, I will sustain the objection. He can speak as to his own experience.

Mr. Polley: Have you ever observed objects in the caboose dislocated as a result of slack action?

A. Yes, sir.

Q. What objects?

A. I have had the stoves uprooted and knocked down, dislocated, stove-pipes knocked down, glass broke out of the caboose from the jar, the door has glass in it, the upper panel, that is often broken out, the windows in the cupola or in the end of the car are broken out from slack action. There is a window broken in my cupola right now, I have it patched with two buttons, one on each side, with a wire through it, couldn't get it fixed, it is that way right now, caboose 658.

Q. Does the possibility of slack action worry you in any way?

A. Well, it is nerve-wracking. You are expecting on these long trains, you are expecting something to happen most any time. I am pretty long-legged, I usually get my legs wrapped around some object to hold while I am doing [fol. 4763] clerical work to keep me from being slipped around. We try to do our clerical work while going up-grade, it is steadier and safer, you don't have the run-ins unless they make a sudden stop for some reason.

Q. Now, you have worked on both long trains and short trains, have you not?

A. I have.

Q. Has the length of the train any relation to slack action?

A. Yes, each car has its own individual slack and as you increase the cars you increase the slack action. It is more severe on a long train than a short train.

Q. Are you familiar with the rule that requires livestock be placed in the front end of the train?

A. I am.

Q. Do you know why that rule is in effect?

A. Well, it is for the safety of the stock; they don't get the slack action up there as they do at the rear end of the train.

Q. What effect does slack action have on a carload of livestock?

A. Well, it knocks them down, they are piled up, injured, killed, as it was in the case that I related a few minutes ago [fol. 4764] at Rodeo, those stock were in the wrong place, they were in the hind end of the train, they had broken backs, broken legs, and horns knocked off.

Q. Do you have other rules concerning the placing of other commodities in the train?

A. Well, there is no set rule, but it is for safety, fragiles that are more liable to break are placed on the head end of the train as much as possible to get away from breaking or damage to the commodity.

Q. Now, you heard Mr. Fail testify as to his problems with trespassers. Has your experience been similar?

A. Very similar, they are an extreme nuisance on these freight trains, they cause lots of trouble by stepping on cut levers and separating your train, which doesn't only create a possibility of someone being injured from the sudden stop, but they cause you serious delays in handling your train over the division.

Q. Are they harder to control and watch on long trains than they are on short trains?

A. Yes, they are; like any other obstacle you have in the operation of trains, the more cars you have the more you have to look after it, and it seems that they can never get [fol. 4765] located on a train, they are always running around looking for a better place to ride to get out of the wind or something.

Q. How are signals passed from the train crew on the rear end of the train to the engineer in the cab?

A. Well, they are relayed from one to another. You have got first to get, I would say, if he is available, the head brakeman in view of the engineer, and the next man in view of him, and yourself or the man at the rear of the train, they relay the signal one to another.

Q. When a train is in motion, are the members of the train crew spread out over the train?

A. Not as a general thing.

Mr. Mason: I take it this all relates to operation in New Mexico where he runs?

The Witness: Anywhere.

Mr. Polley: Where he operates.

Mr. Mason: He says he hasn't been over here in how long, seventeen years?

A. No, I worked over here exclusively up until about 1929.

The Court: Proceed.

The Witness: There was something said about the west end out of here; that is way back.

[fol. 4766] Mr. Mason: I suppose I have that confused. I understood you had been working out of El Paso since about 1927.

A. No.

Mr. Polley: Then it would be necessary for the trainmen on the rear end of the train to attract the attention of the engineer?

A. Yes. Of course, if you are standing—

Q. No, I am limiting my question to a train in motion.

A. In motion you have to attract him in some way, and if there isn't anyone on the engine looking around, looking back, why, then it is a problem. If the reason for signalling him is important enough, why, as a last resort you would apply the air if you wanted him to stop.

Q. Does the length of the train have any effect upon your ability to signal the enginemen?

A. Yes, it is like any other distance, the further away you are from the engine the more difficult it is to relay and pass signals from where you may be up to the engine.

Q. And I take it, if the signal can't be seen you apply the air?

A. As a last resort, yes, sir.

Q. In New Mexico, have you experienced any delay with [fol. 4767] long trains at short sidings?

A. Yes, with the long trains they arrange for them to stay at sidings that will hold them as a general thing, which does result in very serious delays. I was at Akela, New Mexico, with a hundred-car train some time back—this is a matter of record in the company's records, Engineer Jim Wiley and myself with a message to stay there for several trains that were superior to us, and also Train No. 2, the Sunset Limited. We were at Akela two hours and forty-five minutes before No. 2 left Lordsburg. We stayed at Akela for them, I wouldn't say offhanded just how long we were

there, but some five hours; no place to eat or anything, was one of the sore spots.

Mr. Polley: That is all.

Cross-examination.

By Mr. Mason:

Q. What is your seniority date?

A. August 9, 1912.

Q. As Conductor?

A. No, as brakeman.

Q. What is it as conductor?

A. February 7, 1917.

Q. You have twenty-four years and two months seniority [fol. 4768] as conductor, haven't you?

A. Yes, sir.

Q. And I take it that your seniority extends from Yuma to Tucson, Yuma to El Paso?

A. Yuma to El Paso. I might qualify this: My seniority is on the south line, El Paso to Tucson, and of course, since the merger we have acquired seniority from Tucson to Yuma over the other line.

Q. Were you originally employed by the El Paso and Southwestern?

A. Yes, sir.

Q. Now, does your seniority date of February 7, 1917, give you that date between Yuma and El Paso?

A. On certain jobs after the S. P. men get their protected number of crews, then my date applies.

Q. Does your date apply west between Tucson and Lordsburg as well as west of Tucson to Yuma?

A. Yes, sir, oh, yes.

Q. And your seniority enables you to work between Lordsburg and El Paso in the same way that it would between Tucson and Yuma?

A. Yes, sir.

Q. That is, you get the preference on the Lordsburg-El [fol. 4769] Paso North line route after the protected Southern Pacific employees are taken care of?

A. Yes, sir.

Q. Then, in a practical sense you can elect whether you want to work between Yuma and Gila or between Gila and

Tucson, or between Tucson and Lordsburg, or between Lordsburg and El Paso, can you?

A. Yes, sir, or between El Paso and Douglas, or between Douglas and Tucson.

Q. Could you hold a regular job in freight service between Douglas and Tucson at the present time?

A. Yes, sir.

Q. Or between Lordsburg and Tucson?

A. Yes, sir.

Q. Or in either of the districts between Tucson and Yuma, couldn't you?

A. Yes, sir.

Q. Then there are four short train districts where you could work at the present time, aren't there?

A. Yes.

Q. In addition to that, the district between Tucson and [fol. 4770] Douglas is predominantly a short train district?

A. Yes, to Rodeo.

Q. It is predominantly a short train district in New Mexico as well?

A. They haul 100-car trains to Rodeo, 165 miles, 52 miles in Arizona, it is.

Q. Mr. Ash, it is in evidence here by an actual train count that less than two per cent of the trains operated during four typical months of 1939 between Rodeo and El Paso over the South line consisted of 71 cars or over. You wouldn't disagree with that, would you?

A. Well, I have no way, I have kept no track, but I have worked on and handled many a hundred-car train between El Paso and reduced at Rodeo, took 70 or whatever the case might be, on into Douglas.

Q. Well, do you know whether or not, at the present time, I mean in 1939 and '40, the proportion of long trains, and when I say long trains throughout my questioning I mean trains of 71 cars or more, the proportion of long trains on the district between Rodeo and El Paso is greater than two per cent?

A. Well, I wouldn't question it because I have kept no [fol. 4771] record, but I might add that for the greater proportion of that time they only ran one train each way a day on the local work, and naturally over that 217-mile district they couldn't haul a very long train and make the time and do the work they do, that is true.

Q. Then in a practical sense, Mr. Ash, there are five short train districts out of the six on which you hold seniority where short train operation is either exclusive or at least predominates to the extent of about 98 per cent; that is correct, isn't it?

A. I wouldn't disagree with your percentage, I don't know.

Q. There are four districts out of the six over which you hold seniority where short train operation is compelled by the Arizona law, that is correct, isn't it?

A. That is right.

Q. But you still continue to work between Lordsburg and El Paso on the only district where you will handle long trains to any extent, isn't that so?

A. That is right; I could qualify that. I believe I am entitled to.

Mr. Mason: I am not asking you. If your counsel wants [fol. 4772] to ask you why you do it, they may ask you.

The Court: Your counsel may ask you at the proper time.

Mr. Mason: You are not forced to work between Lordsburg and El Paso, are you?

A. I am forced to work there or leave my home which I have long since established in El Paso, a family and all.

Q. Then you have worked over that district largely for about twelve years; haven't you?

A. Well, between there and Hachita, we cut out Hachita, New Mexico, that was the terminal on my line when I established myself in El Paso.

Q. You established yourself in El Paso in 1929, did you?

A. I did.

Q. And at that time the Arizona law was in effect?

A. Yes, sir.

Q. And at that time there was no limitation of trains in New Mexico?

A. No.

Q. So you voluntarily went to El Paso to work out of El Paso instead of working in Arizona where the short train law was in effect?

A. Yes, sir.

[fol. 4773] Q. Then you voluntarily put yourself in a place where you would undertake long train operation, didn't you?

A. I didn't go down there to work on long trains, I went down there and bid in and was assigned to and worked on the old Drummer Special, it was a mixed train running between El Paso and Douglas. That was my reason for going to El Paso, personal, financial reasons.

Q. You have stayed there ever since?

A. Yes, sir.

Q. In spite of the fact that train lengths in New Mexico have increased, and haven't increased beyond 70 cars at least in Arizona?

A. Yes.

Q. And in spite of these supposed dangers of operation of long trains which beset the employees in the caboose, haven't you?

A. They are not supposed to be dangers.

Q. You have stayed there in spite of these dangers which you have considered real?

A. I have.

~~Mr. Strauss: May the witness answer the question before counsel interrupts him?~~

Mr. Mason: When you might have avoided these supposed [fol. 4774] dangers or real dangers by coming to Tucson or Yuma. You could have, couldn't you?

A. By leaving my home and my interests, yes.

Q. As a matter of fact, Mr. Ash, from the safety standpoint and because you prefer to work in New Mexico, the Arizona law doesn't mean anything to you from the standpoint of safety, does it?

A. Yes, it means a lot. It means everything to me.

Q. How does the Arizona law affect you, who continue by preference to work in New Mexico outside of its limitations, how does it afford you any protection?

A. Well, I have got a right to work here, if I wanted to come here I would have the protection of it, but personal reasons, financial reasons that don't immediately appear, that is the reason I have established my home in El Paso. I have my family there, school facilities, and if you please, my daughter is working there, and I am not walking off and leaving that for the sake of working in Arizona.

Q. Mr. Ash, your presence over there in El Paso is purely voluntary and not compelled by anything that the company has done to you, is it?

A. Oh, no.

[fol. 4775] Mr. Strouss: I think that has been asked and answered, if the Court please.

The Court: It has been asked and answered.

Mr. Mason: I just want to emphasize it.

[fol. 4776] Q. As long as you continue voluntarily to stay at El Paso and work between El Paso and Lordsburg or Lordsburg and Douglas, the Arizona law does not afford you any personal protection?

A. It furnishes me a lot of protection if I work into Douglas.

Q. I am not asking you that. As long as you stay over there, it does not afford you any personal protection?

A. You said if I worked to Lordsburg or Douglas and I said if I worked to Douglas it affords me a lot of protection.

Q. How long since you have worked into Douglas in freight?

A. It has been several years.

Q. (Interrupting) You are voluntarily working then—

The Court: Let the witness finish his answer. Were you through, Mr. Ash?

A. I was trying to tell him the condition of operation has changed. We used to move into Douglas, but the run I worked on moved over to the other side and naturally that is the only place that is left for me.

Mr. Mason:

Q. You are working then between El Paso and Lordsburg still when you might work between Tucson and Lordsburg or between Tucson and Yuma on either of these districts, leaving out the south line entirely?

A. As stated to you before, sir.

Q. As long as you continue as you have for several years past to work between Lordsburg and El Paso, the Arizona law does not personally afford you any protection, does it?

Mr. Strouss: That has been asked and answered.

The Court: The objection is overruled.

A. I want to stay in the rule but I want to tell you, you can't ask me the question and answer it yourself and get me to agree with you, if that is in order.

The Court: Well, the witness is not expected to argue with the attorney, Mr. Ash. You can answer the question.

A. That is what I was attempting to do when I was shut off.

The Court: There is a question now before you. Read the question and answer that and make any explanation you desire.

A. As I said before, my personal reasons, staying in my home, that is the only job that is left for me without being taken away from my home and as long as I desire to remain there and work I believe that is my personal affair.

Mr. Mason: Your Honor, I submit that is not any answer to the question.

The Court: The question may be answered yes or no and any explanation that you may have may stand. Read the question, Mr. Reporter.

(The question was read by the reporter as follows: "As long as you continue as you have for several years past to work between Lordsburg and El Paso, the Arizona law does not personally afford you any protection, does it?")

A. Not as long as I am working over there, it doesn't, no, sir.

Mr. Mason:

Q. As a matter of fact, the Arizona law does result in the trains being shorter between Lordsburg and El Paso than they otherwise would be, doesn't it?

Mr. Polley: Just a second, we didn't ask the witness anything like that.

The Court: That objection is overruled.

Mr. Strouss: I object to it as calling for a conclusion. I don't know how he would know what brings about the make-up of trains over there. That is a matter for the railroads themselves. He takes what they give him.

The Court: That is probably true. I will sustain the [fol. 4779] objection.

Mr. Mason:

Q. Mr. Ash, the trains coming into Lordsburg from the west come in in the size appropriate to the Arizona law, don't they?

A. Yes, 70 cars or less.

Q. When they run eastbound they generally run eastbound through Lordsburg to El Paso without change?

A. In some cases, and there are cases—

Q. (Interrupting) About three out of four cases they do, don't they?

A. I couldn't tell you how many but often they will run five trains in from Lordsburg and three out—

Q. In some cases or many cases that you have yourself seen and handled, they run the trains right through Lordsburg?

A. Right through as they arrive, yes.

Q. You spoke of the westbound train which you said was held at Akela for a possible five hours. That was a 100-car train, was it?

A. Yes, sir.

Q. What was the consist?

A. Refrigerator cars.

Q. Empties?

A. Empties, yes.

[fol. 4780] Q. It was what you call an empty drag, wasn't it?

A. Yes, sir.

Q. You were inferior on that account to all the other trains on the road, weren't you?

A. Yes, sir.

Q. During the last eight years, and by that I mean the years commencing with January 1, 1933, Mr. Ash, you have not yourself suffered a reportable casualty of any kind, have you?

A. No.

Q. There has been no member of any crew on any freight train on which you were employed who suffered a reportable casualty of any kind, has there?

A. I don't call to mind any just now.

Q. You have had a number of reportable casualties on passenger trains where you were conductor or brakeman?

A. Yes.

Q. And everyone of those passenger trains consisted of 43 cars or less, didn't they?

A. I couldn't tell you the number because I don't have the record but I wouldn't dispute your record on that because I know your record is made up from my reports.

[fol. 4781] Mr. Strouss: I don't want that statement to be taken that we agree with the statement of counsel as to what their records show is a fact. If they want to put their records in evidence, let them do it but we are not going to do it by counsel testifying what they are.

Mr. Mason: If the witness wants to disagree he certainly has that privilege.

Q. Do you recall any accident happening to a passenger train where you were a conductor or member of the crew?

A. Yes.

Q. Involving a train of more than 14 cars?

A. The number of cars I couldn't say because I don't have my record. I recall a woman getting up in the seat at Lordsburg to get her hat, stepped down and sprained her ankle.

Q. When was that?

A. In the last few years, I wouldn't say how long ago it has been.

Q. In the last eight years?

A. Oh, yes.

Q. Was it reported?

A. It was reported.

Q. The train was standing at the time, was it?

A. Yes, standing at Lordsburg station.

[fol. 4782] Q. You don't know how many cars were in the train?

A. No, I don't.

Q. If the train was standing, the length of the train wouldn't have anything to do with the casualty?

A. Nothing whatever.

Q. That is the only casualty you can recall in passenger train operation during the last eight years?

A. No, I recall another one, a woman stepping on a bottle in the club car and sprained her ankle.

Q. Do you know where that was?

A. Somewhere between here and Douglas on the south line, conductor Morrissey.

Q. You were a brakeman at that time?

A. I was the flagman.

Q. Was the train moving at the time?

A. Yes.

Q. That happened in Arizona, did it?

A. If my recollection is right, it seemed to me we reported it at Douglas or called the doctor or something to look after her.

Q. Do you remember the number of the train?

A. 44.

Q. That train, if it was in Arizona, consisted of 14 cars [fol. 4783] or less?

A. Yes.

Q. You have spoken of slack action and you say I think that it consists of either a run-out or run-in?

A. That is where you get your injury or jar, from run-in or run-out.

Q. You say they are both equally bad?

A. Yes, sir.

Q. The jar is about the same in both?

A. Yes.

Q. You get the sudden jar from the run-out of slack when there is an emergency application at the rear end, do you?

A. No, you can get it from an emergency application of the air or the train starting or going over a hump or hog back as we call it, the head end goes over and gives you a jerk, that is what we call a run-out.

Q. That would be a run-out?

A. Yes, sir.

Q. You also can get a run-out of slack I suppose if the air is applied in emergency at the caboose or by the conductor's valve at the caboose when the train is running, can you?

A. If it was bunched, you would get a run-out because [fol. 4784] when you apply the conductor's valve the brakes set on the hind end of the train first and naturally you would get a run-out.

Q. That doesn't give any jar or jerk to any members of the crew in the caboose, does it?

A. It gives them a jerk when the engine goes against that train of cars.

Q. There is no slack action in the caboose as a result of the application of the air in emergency at the conductor's valve, is there?

A. Oh, yes, when that rear end of the train, when the brakes take hold on the rear portion of the train and the

engine runs out you get a run-out, the engine gives you a jerk.

Q. The caboose stops first, doesn't it?

A. That is right.

Q. And the others run away from it?

A. That is right, it jerks the caboose out from under you practically.

Q. Have you had any reportable injury to a member of the crew in the caboose as the result of the use of the conductor's valve that you can recall? I want you to understand what I mean by a reportable injury, in the case of an employee on duty it means an injury which incapacitates him for more than three days in ten days following the [fol. 4785] injury?

A. I don't recall one except the one I related here a while ago with engineer Riley when I knocked his teeth out and I couldn't say how long he was off, but he was off several days.

Q. We have searched our records and we cannot find any record of a reportable injury to engineer Riley, but that, as I recall your stating, was on a 70-car train?

A. Yes, sir, we were backing into the Tucson yard.

Q. Backing in?

A. Yes, before they built the crossover here we used to come down to Tucson, if you are familiar with the Nogales operation, we came in over the Nogales line. The westbound train when it hit this yard was headed east, headed east on the Southern Pacific main and backed in and that is what we were doing at the time.

Q. The conductor's valve was used at what was the head end of the train in direction and motion, you were moving backwards?

A. Yes, we were backing west. Of course the engine was on the east end.

Q. The conductor's valve was used as the caboose was moving westward?

[fol. 4786] A. Moving westward, the slack was stretched.

Q. You say the slack was stretched when the train was backing in?

A. It was bound to be. When I set the brakes on the back end the engine came back against it the same as it goes away.

Q. The other accidents you have told us about, you have told us about a 70-car train which involved an injury to conductor Preston in the Tucson yard?

A. Yes, sir.

Q. You spoke also of an undesired emergency but didn't give us the date or the name of the person injured or the place which occurred in 1926 on a 70-car train?

A. Coming into the Tucson yard, that was south yard junction. We used to go into the south yard.

Q. You don't recall who was hurt?

A. Yes, I said conductor Powers. He had some teeth knocked out.

Q. You have given us now a story of four slack action accidents, three of them in 1926 and one in 1925?

A. That is, right.

Q. One at Rodeo in 1926, 70 cars?

A. Yes, sir.

[fol. 4787] Q. One when conductor Powers was injured entering Tucson yard in 1926?

A. Yes, sir.

Q. One when conductor Preston was injured on September 9, 1926, a 70-car train also?

A. That was September 26 Preston was injured.

Q. You mean to say you had an accident at Rodeo on September 26 and also at Tucson on September 26?

A. Wait a minute. The one at Rodeo was in 1925. I believe you have the accident to Preston of record, September 26, 1926.

Q. We have a record that corresponds to yours exactly and it is in evidence here but it shows the date as September 9, 1926?

A. Of Preston?

Q. Yes.

A. O. K., that is the one.

Q. You have four of these. All of them happened on 70-car trains, didn't they?

A. Yes, sir.

Q. And three of them happened in Arizona?

A. Yes.

Q. It is fair to state, isn't it, Mr. Ash, that the 70-car limitation in Arizona did not prevent or ameliorate those accidents?

[fol. 4788] A. No, but I have never agreed with anybody that a 70-car train was not a long train.

Q. That is the limit in the law that you are now attempting to defend, isn't it?

A. That is right.

Q. You don't know whether the injury to conductor Powers was reportable or not?

A. I am sure it was because he was off, I couldn't say how long, he was working in Preston's place when that happened.

Q. Was any member of the crew injured at Rodeo in that accident?

A. Myself—but we didn't report it. It was one of those we let go but I still have the mark.

Q. There was no record as a reportable accident?

A. No, there would be no reportable record but the bill for those cattle. They got teams, plows and scrapers to dig trenches to bury them in when we got them unloaded.

Q. I think you said that the matter of sticking triple valves generally took place at or near the rear end of the train. Is that correct?

A. Near the rear. The further away from the engine the less they can control them. They can control them back [fol. 4789] to a certain point but after that—

Q. (Interrupting:) About how far back do they commence to be evident?

A. I don't know how far the Westinghouse people claim they can control them now.

Q. I am asking as to your experience. About how far back do these sticking triple valves begin to show up?

A. It starts back about fifty; that is the line of demarcation I think.

Q. And from then on back to the caboose?

A. Yes, sir.

Q. Would you say about the sixtieth car is where they begin to show up mostly?

A. They vary, not always, but it is in the rear portion.

Q. The nearer to the rear end I suppose in a long train the worse the condition?

A. The longer the train the worse the condition.

Q. And the condition is worse on the rear end rather as the train gets longer, that is, it is worse on the 90th car in a 90-car train than it is on the 70th car in a 70-car train?

A. Sure.

Q. Of course the nearer the rear end it is the nearer it is to the caboose?

[fol. 4790]. A. That is right.

Q. And the easier for the men in the caboose to detect it?

A. We detect them back there but the trouble comes in getting it stopped.

Q. That leads me to a discussion of the matter of passing signals. When the train is stopped, Mr. Ash, do you have to pass signals then?

A. If you want to move your train you do.

Q. There are three signals that you generally give when the train stops, aren't there, one is a proceed signal, isn't it?

A. Yes.

Q. The second is possibly a back-up signal if you want to back up?

A. Yes.

Q. Is there any other?

A. If you want him to stop.

Q. He is already standing. I am talking about the signals you give when the train is standing.

A. If you want him to back up or proceed.

Q. Those are the only two that you give him when he is standing?

A. You give him a signal—

Q. (Interrupting:) Suppose that your engineer doesn't see or understand your proceed signal and the train is [fol. 4791] standing. Suppose he doesn't see or understand it, does anything happen?

A. No, nothing happens. You will have to—

Q. (Interrupting:) Nothing happens except you have to go forward to a point where you can give the signal and have it understood?

A. Nothing happens except the delay.

Q. There is no hazard involved, is there?

A. Ordinarily not.

Q. And the same way if the back-up signal is not seen or understood, all you have to do is to see that it is understood. So nothing happens except delay?

A. Nothing happens while you are standing, no.

Q. If the train is moving, proceeding, is there any signal you have to give other than the stop signal?

A. To get him to stop.

Q. Is there any other signal you would give while the train is moving other than the stop signal?

A. No, not if that is what you wanted.

Q. You would not give him the proceed signal if he is already going?

A. Not if you want him to stop.

Q. You wouldn't give him the back-up signal?

[fol. 4792] A. No.

Q. So the stop signal is the only signal that you use when the train is moving, isn't it?

A. It depends on the condition. If you want him to stop, the stop signal is the one you would give him.

Q. If an emergency is present where you think hazard may be involved, the stop signal is the only one you use, isn't it?

A. Yes.

Q. If the stop signal is not understood, then you pull the air in the caboose, don't you?

A. Yes.

Q. I think you told me that there is no hazard involved to the men in the caboose because of the stop caused by pulling the air in the caboose?

A. No, I didn't tell you that.

Q. Have you any case of any injury or death of any person or member of your crew caused by pulling the air in the caboose?

A. No, because—

Q. (Interrupting:) The only instance you can tell us about, an injury caused by pulling the air in the caboose is an unreported injury to an engineer?

A. I wouldn't say it was an unreported injury.

[fol. 4793] Q. It is an injury that you remember to an engineer?

A. It is an injury that I remember to the engineer and it is an injury that I know this company remedied by replacing the teeth and they are not replacing any teeth unless there is a report.

Q. Was there a casualty sufficient to incapacitate this engineer from the performing of his ordinary duties for more than three days?

A. I couldn't say that, I haven't got the record on that but I know it was reported because I made the report.

Q. You know it was reported to the Arizona Commission or the Interstate Commerce Commission?

A. It was reported to the railroad officials; whether they reported it to the Commission or not I don't know.

Q. You don't know how serious the injury was insofar as the performance of duty by the engineer was concerned?

A. With five teeth knocked out I am sure he was laid by and his mouth was pretty badly skinned and bruised.

The Court: Mr. Ash, the point counsel is getting at and what the Court would like to ask you, when you apply your [fol. 4794] conductor's valve the danger then, the hazard is to the engineer and the parties ahead, possibly the swing brakeman or the engineer and fireman and not to the occupants of the caboose?

A. Your Honor, if you are moving forward and your slack is bunched on your train and you apply the air from your caboose, you get a severe run-out of that engine which practically jerks the caboose out from under you and that is what I meant about the injury to an employee, a possible injury to an employee in the caboose when you pull the air.

Mr. Mason:

Q. You cannot tell us of any case that you know of where an employee in the caboose has been injured because of the run-out of the slack after the application of the air in the caboose?

A. I have pulled the air very few times.

Q. Then it is a situation that arises relatively infrequently when you feel compelled to pull the air, is it?

A. I will take an awful chance before I will touch the air on a 100-car train. To avoid a serious accident or damage is about the only reason you would pull the air.

Q. Do I understand you to say when you do pull the air [fol. 4795] in the caboose it results in a severe jar at the head end of the train if the slack is bunched?

A. If the slack is bunched, he jerks the caboose out from under you.

Q. Is there a jar at the head end as well?

A. Yes, he will feel it.

Q. I understand you to say that the jar is as severe as if the air was applied at the head end?

A. Yes.

Q. Can you find anything in the rule book as to the placement of livestock at the head end of the train?

A. No, sir.

Q. As a matter of fact, it is permissible to place live-stock at any point in the train that the drover or caretaker handling it desires?

A. You can place them on the hind end of the train if the caretaker assumes the responsibility and you have to start and make notations on your stop report that they were placed in the rear of the train by request of the caretaker.

The Court: By reason of the fact that these cattle must be fed at stated intervals, would require them either being placed at the front of the train or the rear so that they [fol. 4796] could be readily switched on your sidetrack, wouldn't it?

A. Yes, sir, and I might state, your Honor, at Lordsburg where I handle the cattle we come into Lordsburg and that train comes to a rest in the train yard, the rear end of the train is right opposite the stock chute. The caboose will stop—here are tracks 1, 2, and 3—and the stock chute is just in the clear on track 4. It is just as square across as you are from me now. However, we must handle that stock on the head end of the train. The same thing applies at Tucson. The stock comes in here from the east, the greater portion of it is handled west. The westbound trains stop in the Tucson yard and the rear end of that train is right up at the stock yard but the stock must be handled at the head end of the train.

Mr. Mason:

Q. While the rear end of the train stops opposite the stock chute at Lordsburg, it is across three or four tracks, isn't it?

A. There are only four tracks there.

Q. You couldn't handle this stock direct across these three or four tracks without blocking the tracks, could you?

A. I never attempted to convey that that was the thought.

Q. Isn't it a fact that the stock are placed on the head end [fol. 4797] particularly entering Lordsburg because the engine can handle them without breaking up the rest of the train and taking them to the stock chute immediately?

A. No.

Q. It is a fact that the engine can do so?

A. It can do it, but what I was trying to convey to the judge was that if they were in front of that caboose, that

caboosé is changed at Lordsburg, that is the first move it makes ordinarily, it comes around and takes that caboosé off and then spots the stock.

Q. They can do it just as readily from the head end without disturbing the caboosé, couldn't they?

A. They could, but they would be delaying the train. The first move is to change the caboosé, that is the regular routine work. We change the caboosé and then unload the stock.

The Court: Does the engine that pulls you in, do this switching?

A. Yes, sir. There is no yard force there and the incoming crew from El Paso do the Lordsburg switching and ninety times out of every one hundred when you go in there with stock you bring your train in the yard, reach up [fol. 4798] and get the outgoing caboosé with your road engine, holding on to your stock which they unload there, which lots of them do, and you go to the rear end of your own train, take off your caboosé, put the Tucson caboosé on there and then unload your stock, whereas if it was safe to handle them on the rear end of the train it would be a much quicker operation in Lordsburg by having them back there.

Mr. Mason:

Q. I understand you to say that trespassers present a greater hazard to you on long trains than on short ones?

A. Yes, sir, they have more cars to run over and play on, choose from.

[fol. 4799] Q. Now, you don't say that you have any more trespassers on a long train than on a short train?

A. I didn't infer that at all.

Q. It is just that they have a longer playground?

A. That is right, more chances to cause you trouble.

The Court: How often does that happen that a trespasser, a hobo would actually cause the break-in-two of your train, in your experience?

A. From my experience, it would happen to a crew once or twice a month. Climbing on and off the cars, your Honor, the stirrup in the ladder of the car is on the side, you see, of the car, as you know. There is also a ladder on the end of the car, and right under that end of the ladder is the operating lever that pulls the pin that separates your

train, and they will step on that, you know, in either climbing up or down, not knowing in many cases what they are doing.

Mr. Mason: Now, Mr. Ash, when they step on the cutting lever that causes a break-in-two?

A. Yes, sir.

Q. You are required to report all break-in-twos?

[fol. 4800] A. That is not reported, it causes no damage to your train.

Q. Won't it set the air?

A. Sets the air, yes.

Q. Doesn't it break off the air hose?

A. No, they separate, they are fastened in a way when they are stretched out they will pull off an air hose, but a general thing, it doesn't.

Q. It also causes hazard to the crew?

A. Why, sure.

Q. Now, have you in the last eight years had any reportable injury to yourself or any member of your crew caused by slack action resulting from a break-in-two where a trespasser stepped on a cutting lever?

A. No, I haven't; I have been one of the lucky ones.

Q. It hasn't happened to any one of your trains to cause anyone injury?

A. No.

Q. Now, Mr. Ash, if you have, let us say, a thousand cars at Lordsburg, coming into Lordsburg that have to be moved to El Paso, and you move those thousand cars in fifty-car trains, you will have twenty such trains, won't you?

A. Yes.

[fol. 4801] Q. And you will have twenty crews, twenty conductors, won't you?

A. Yes.

Q. And forty brakemen or more?

A. That is right.

Q. And they will be exposed to this hazard, such as it is, of break-in-two and injury from the action of the trespassers, won't they?

A. The result of a break-in-two on a 50-car train is just half what it is on a hundred.

Q. Well, let us say on a 70-car train, the only slack action accidents you have told us about were on 70-car trains, and you told us about four of them, let us move our

thousand cars then in 70-car trains, you will have fourteen of them, with twenty cars left over, is that right?

A. That is right.

Q. You will have fourteen conductors and forty-two brakemen, fifty-six men exposed, won't you?

A. You would have twenty-eight brakemen.

Q. You would have only two brakemen?

A. Yes.

Q. Don't you have three brakemen on some of your trains in New Mexico?

A. After it goes over seventy.

[fol. 4802] Q. Then, with some of your trains at least, you would have to move that thousand cars in more than seventy car trains, wouldn't you, you would have twenty cars left over otherwise, at Lordsburg?

A. Yes.

Q. You have three brakemen when you have more than seventy cars?

A. More than seventy cars.

Q. You would either have fifteen conductors or thirty brakemen, forty-five men exposed, or you would have seventy-one car trains and an increased number of brakemen to move the thousand cars?

A. Yes.

Q. Now, if you move that in trains of, well, let us say, 125 cars, you would have eight such trains, wouldn't you?

A. Yes.

Q. You would have eight conductors and sixteen brakemen exposed?

A. Yes.

Q. Twenty-four men. If you don't have any more trespassers on long trains than you do on short ones, your danger, so far as the men are concerned, is the danger of the [fol. 4803] exposure to this possible casualty, isn't it?

A. That is where the danger comes, but—

Q. And where you move—

Mr. Strouss: Let the witness answer.

Mr. Mason: He answered my question.

The Court: No, if he wants to make an explanation there he may.

The Witness: The danger comes, but when you increase your train lengths, you increase the possibility of the cutting in two, because they are continually moving around,

they never get set, or as we say, "stay put," they are looking for a better place to ride, they are uncomfortable. In other words, we are not furnishing them as good service as they are looking for.

Mr. Mason: Then you will still agree with me, will you not, Mr. Ash, that if you move those thousand cars in seventy-car trains, you will have exposed 42 men, and if you move them in 125-car trains, you will expose only 24.

A. The number is correct, yes.

The Court: When you have a straight train of boxcars, where do your trespassers, your hoboes, ride?

A. Well, if they are closed cars, sealed, they will ride on top or in between, any place they can get. You often [fol. 4804] find them standing on the drawbars between the cars trying to get out of the wind.

Q. They don't ride the rods any more?

A. They are steel structures, there are no more rods. You do find them on the brake beams. I have found them on the brake beams and on the truck frames of passenger trains. I have even found them, hoboes, Judge, underneath the pilot and under the old cowcatchers. There are slats under, two slats not over four inches wide, I found a hobo in under there riding.

Mr. Strouss: It is seventeen minutes after four.

The Court: The court will be at recess until ten o'clock tomorrow morning.

(Thereupon the court stood at recess until April 16, 1941, at ten o'clock A. M.)

[fol. 4805]

10 A. M., April 16, 1941

All parties being present as heretofore noted, proceedings were resumed as follows:

The Court: You may proceed with the cross-examination of Mr. Ash.

A. T. Ash resumed the witness stand.

Cross-examination.

By Mr. Mason:

Q. Mr. Ash, you worked pretty steadily during the year 1940, didn't you?

A. Yes, fairly. I was off on one vacation and the rest of the time just occasional trips I was off.

Q. According to the notation I have, you made 164 trips as conductor and 57 as brakeman. Would that about agree with your recollection?

A. I wouldn't dispute that at all. I know I worked in both services.

Mr. Strouss: Are you talking about freight service?

Mr. Mason: Both freight and passenger. I was going to mention that now.

Q. In passenger service you made 48 trips as a brakeman [fol. 4806] and 22 as conductor according to my record?

A. I presume that is correct.

Q. In freight service, 140 trips as conductor and 6 as brakeman, is that right?

A. That would be about right.

Q. In addition to that the balance was either dead-head trips, three of those, or in work train service?

A. Yes, sir.

Q. You spoke yesterday of the work of replacing journal brasses. Do you recall having had to replace any journal brasses on any trains on which you were conductor in 1940?

A. I don't have that record with me, in fact we don't keep a record of that. I would have to state that by memory.

Q. You make a notation on your time return and delay report, don't you?

A. On the delay report you show so much delay replacing journal brass or whatever the case might be.

Q. That would be a delay as you said yesterday—perhaps you didn't say it, but I think it was indicated—that it would be a delay of at least thirty minutes?

[fol. 4807] A. Well, you would be awful lucky to brass a car in thirty minutes, they would have to be very favorable conditions.

Q. You don't recall having rebrassed any journals last year at all?

A. I couldn't say at this time because I don't have those records with me but I have rebrassed many, many journals.

Q. According to my memorandum taken from your time return and delay reports you had two such occasions during the year 1940, one at Gage on October 24th?

A. I recall that.

Q. That was a 44-car train, wasn't it?

A. I don't remember the train.

Q. The job was done at a station, wasn't it.

A. Yes.

Q. And the other, and the only other, according to the notation on your time return and delay reports, was on November 13, 1940, at Deming?

A. Yes, sir.

Q. In train 982?

A. Yes, that was a car I picked up there.

Q. Your train was a 43-car train?

A. It was a small train, I recall that.

Q. Do you recall now any other occasion during the year [fol. 4808] 1940 on any other train long or short?

A. I do not particularly.

Q. You said I think in your testimony that the principal reason for the replacement of journal-brasses is lack of lubrication resulting in friction and in hotboxes?

A. Yes.

Q. That lack of lubrication is associated with the car itself, isn't it?

A. If the car is properly lubricated, it don't develop hotboxes.

Q. The cars are individually lubricated; aren't they?

A. Oh, yes, each box is.

Q. Whether or not they are lubricated has nothing to do with the length of the train in which they are being hauled?

A. No, the only thing the length of the train has to do with it is to increase the percentage of boxes.

Q. Would it increase the percentage of merely the number?

A. The number, the percentage, each car has eight boxes.

Q. Will there be more hotboxes per hundred cars run if those cars are run in hundred-car trains or in fifty-car [fol. 4809] trains?

A. There would be more because the slack action of the train, the jolts and run-in and run-out often develop hotboxes by the jar that causes the brass to grab the waste and drag it under the brass.

Q. Then it is your contention that the run-in and run-out of slack may affect the lubrication in the individual car?

A. It would affect it to the extent of grabbing the packing that is in the box, we find that. That is a well-known fact and the jar of the car is what causes that.

Q. You have handled a good many long trains during 1940, haven't you?

A. Yes, I handled my share of them.

Q. How do you explain the fact that the only replacements of journal brasses that you had during that year were on trains of less than 50 cars?

A. The fact in those particular cases was the lack of lubrication and the car at Deming was handled in a long train and set out there from a long train and we came along with a short one and picked her up and repaired it and took the car to El Paso.

Q. How do you know that this car that you rebrassed at [fol. 4810] Deming was handled in a long train?

A. We made the inquiry, they found that hotbox at Mongolia, a distance about 16 miles west of Deming, and brought it down there and set it out to save delay and so forth, being unhandy to brass. I don't know what all the reasons were but it was a very important load and they had them set it out to get that train going.

Q. Was it an eastbound train?

A. Yes, sir.

Q. You don't know how many cars there were?

A. No, I don't. It was conductor Early on whatever train it was.

Q. You don't know whether or not it had more than 70 cars when the hotbox developed?

A. It was quite a long ways, of course I didn't see the train.

Mr. Mason: I should say, for the information of the court, that we have here in the courtroom the time returns and delay reports rendered by Mr. Ash as conductor during the year 1940 and if opposing counsel desire to examine them they are here for examination. I have a memorandum made from them but I have not produced them because it is unhandy to do so, that is in the individual cases I mean. [fol. 4811]

Q. Now, can you give us any instances to illustrate your statement that you have more rebrassing of journals to perform on long trains than on short trains?

A. My experience, as I said before, you increase the number of journals as you increase your cars which, naturally, increases the possibility of hotboxes. However, the long trains are often handled, are made up of empty cars, a hundred empty refrigerator cars is the normal

hundred-car trains handled over the district. However, east-bound they do handle hundred-car trains which are often made up of both loads and empties.

Q. Now, does the loading of the car have anything to do with the possibility of developing a hotbox?

A. Why, sure, the weight of the car creates--increases the friction of the journal.

Q. And that again is a characteristic of the individual car, regardless of the length of the train?

A. Yes.

Q. You don't increase the load in any particular car because it is handled in a hundred-car train, do you?

A. No, if a car weighs 100,000 pounds, if it is handled [fol. 4812], alone it weighs 100,000 pounds, or if it is handled in another train.

Q. So far as the weight of the load and the car body is concerned, why, that factor in creating hotboxes is independent of train lengths then?

A. With the exception of slack action, which causes waste grabbing, and that will develop a hotbox or hot journal as quick as any other thing because this waste goes in under that brass, it immediately starts friction that melts the babbit and causes a hot journal.

Q. You have no instances, as I understand you, specific instances that you can give us where you have rebrassed cars on long trains more frequently than on short trains?

A. No, as I said before, the long trains are principally made up of empty cars.

Q. And the empty cars don't develop hotboxes as readily?

A. Not as readily. However, I had one car not long ago that another man set out of a hundred-car train that was an empty car—in fact, he set two cars out of that train, set one out at Strauss with hotboxes; he set another out at Deming with hotboxes, and that car at Deming, while I was there I put it away for him.

[fol. 4813] Q. When was it?

A. In the last month or six weeks.

Q. You spoke of having had to chain cars; when was the last time that you have had to chain a car?

A. Well, I couldn't tell you any particular date, but I did not so long ago have to switch one out, I got it behind the caboose, that was the easy way. In fact, there was another train came in behind me that switched the car to the rear for me.

Q. Did that happen during 1940?

A. Yes, it was a few months ago.

Q. April 23, 1940? At Luxor?

A. At Luxor, that was it.

Q. A 69-car train?

A. Whatever it was, I don't have that record.

Q. I understood you to say that in your standing inspections you and your crew undertake to inspect the draft gear?

A. Everything that is movable or breakable about the car.

Q. How do you manage to inspect the draft gears?

A. By walking alongside of the train, looking them over, and after that is done the normal procedure would be to [fol. 4814] pull the train by us at a speed not to exceed eight miles an hour, and we would look them over to see if we can determine anything being wrong.

Q. What do you mean by the draft gear?

A. The drawbar that pulls the car couplers.

Q. Is the coupler and the coupler shank part of the draft gear?

A. Yes.

Q. What you really mean, I take it, is the draft rigging at the end of the car which is exposed to vision?

A. What I really mean is the entire drawbar and everything pertaining to the drawbar that holds it to the car that hauls the car.

Q. Are you familiar with that part of the mechanism on the end of the car by which the drawbar is attached to the car body?

A. Yes.

Q. Do you know what that appliance is called?

A. The A. C. key?

Q. No, I mean the entire appliance which attaches the coupler shank to the car body.

A. Well, there are different types of it. It used to be called a yoke, but I think the yoke is about all gone, we have the drawbar keys that fasten them.

[fol. 4815] Q. Does the drawbar key fasten the coupler shank to the car body?

A. Yes; the center sills of the car are upright under the car and the drawbar fits in between, has a slot through the drawbar and through those sills, and this big key goes

through there, and it also has keys in it. I have had occasions where those worked out.

Q. Where the key worked out?

A. Where the key worked out, and the car set out or repaired. I can recall one since you have mentioned it at Mongola, where one worked out and we were able to repair it. We found the key that was lost, we had some help, there was an extra gang working there; we put the drawbar back in the car, replaced the key and used a track spike to hold the key in place. I can't state just when that was, but it has been since I have been working on the El Paso-Lordsburg district.

Q. It was prior to March, 1932, wasn't it?

A. 1932? No.

Q. It wasn't during the year 1940, was it?

A. Well, it wouldn't miss it much. Time is flying pretty fast nowadays, it seem like, but it hasn't been so long ago.

Q. Now, Mr. Ash, you say that the coupler shank is at-
[fol. 4816] tached direct to the car body by means of this yoke?

A. No, this drawbar key to the sill, and then this carrying iron that holds it up in place.

Q. Now, Mr. Ash, isn't there a device to which the coupler shank is actually attached called the draft gear?

A. Yes.

Q. So that the coupler shank is not attached directly to the sills, is it? It is attached to the draft gear by means of the key that you spoke of?

A. Those that have the draft gear.

Q. Is there any car that you have ever seen in the last twenty years that doesn't have a draft gear on each end?

A. No, but still this draw bar which is attached to the draft gear and springs and follow plates, as they were called, are fastened to the car in order to haul the car.

Q. You are not familiar with the present type of friction draft gear in use on these cars?

A. I handle them every day.

Q. Have you ever seen one?

A. Yes.

Q. Have you ever seen the interior of the draft gear?
[fol. 4817] A. Oh, yes. So far as the mechanical terms for them, I might not pick those up.

Q. You referred to springs in there. Is it your understanding that the drawbar or coupler shank is attached to the car body through a series of springs?

A. No, there is no more springs.

Q. There are no springs in the draft gear nowadays, are there?

A. That is one thing that makes them so severe in slack action.

Q. There are no springs in the draft gear, is that your idea?

A. No, there are some springs left.

Q. But the type of draft gear on the newer cars, Mr. Ash—

Mr. Strouss: If the Court please, he wasn't examined on the matter of construction of draft gears. I think this is improper cross-examination.

The Court: No, the objection is overruled.

Mr. Strouss: He has never qualified himself as knowing what the construction is. He has testified only to the operation.

Mr. Mason: He said he could see them. I know he couldn't see the draft gear.

[fol. 4818] Mr. Strouss: He said that on cross-examination.

Mr. Mason: He volunteered it on his direct.

The Court: That is my recollection. The Court will adhere to its ruling. Objection overruled.

Mr. Mason: Now, isn't this true, Mr. Ash, that you cannot inspect the appliance known as the draft gear, by which the coupler shank is attached to the car body, because the draft gear is enclosed and underneath the car body inside the draft yoke?

A. That is true with some types of cars, but not all types of cars. I can take you down here in the yard and show you plenty. If you come down and look at them, I would do that.

Q. In order to inspect the draft gear itself, you have to get in between the rails and underneath the car and look upward, don't you?

A. Yes.

Q. And even then you can see very little of the draft gear?

A. Well, it will depend on your eyes.

Q. It is enclosed, is it not?

A. The later type is enclosed, but the older types are not.
[fol. 4819] Q. Do you know whether or not there are in addition to the springs you mentioned, friction members in there for the purpose of absorbing the push and pull?

A. In the older type cars.

Q. There are friction members on the older type?

A. Yes, sir.

Q. But not on the new type?

A. No, sir.

Q. What you mean by a standing inspection, when you say you rolled the train by at eight miles an hour or less, is the inspection of the coupler and the coupler shank back to the point where the key is inserted, and the knuckle, is it not?

A. Everything that is movable or breakable about the car, we attempt to inspect it to the best of our ability.

Q. But that includes those things which are visible as you walk along or stand at the side?

A. But if there was something inside out of place, then your drawbar is out of place, and that is the way you detect the defect, if there is any.

Q. As a matter of fact, Mr. Ash, so far as the appliance known as the draft gear itself is concerned, you rarely, if [fol. 4820] ever, have a reportable defect in a draft gear, do you?

A. The later type of cars, they are pretty solid. No, we don't have an every-day occurrence. The later type is larger, harder to break; less parts to break, but they still are more solid. We call them "hard drawbars." They create a lot of friction. I have been riding a caboose for quite a while that has one of those hard drawbars. I have it now, caboose No. 427.

[fol. 4821] Q. This carrier iron that you speak of, that is not really a part of the draft gear, is it?

A. It holds it in place.

Q. It holds the coupler shank in place, doesn't it?

A. If the carrier iron comes loose, then your coupler comes down.

Q. It doesn't hold the draft gear in place, does it?

A. It is attached.

Q. The draft gear is bolted to the car, isn't it?

A. Yes.

Q. Let's understand each other. When I speak of the draft gear I mean the appliance to which the coupler shank is attached. Do you mean anything different?

A. I mean the carrier iron is underneath the draw-bar shank that holds the draw bar up in proper place and it is either riveted or bolted to the sills of the car, the center sills to which the entire mechanism is attached.

Q. Mr. Ash, what is your place on the consolidated seniority list of the Tucson district between Yuma and El Paso as conductor?

A. I don't understand just what you mean by "place." [fol. 4822] We are listed in seniority order and each one has a number. That number now is around eighty if that is what you mean.

Q. Yes, that is what I mean. Are there any men senior to you working in freight service out of Tucson or Yuma?

A. Plenty of them, yes, there are men on each district senior to me.

Q. The value of seniority is that it enables you to place yourself in the position you desire if that position is held by a man who is your junior?

A. Yes, we get those positions by bid.

Q. I take it that you don't want to leave El Paso?

Mr. Polley: Your Honor, I submit that was asked and answered yesterday, we have gone through this from one end to the other.

The Court: It was asked him yesterday.

Mr. Mason: I don't think this was asked him yesterday.

The Court: I will overrule the objection, you may answer.

A. No, as I told you yesterday, my personal interest is in El Paso, my home is there and the climatic conditions [fol. 4823] are more favorable to me at El Paso than they are at either Tucson or Yuma and it is my personal reasons that I stay there.

Mr. Mason:

Q. If one of these men who is your senior at either Tucson or Yuma desired your position at El Paso, he could displace you, could he?

A. He could if he lost his position.

Q. You spoke yesterday of a delay which you incurred while making a succession of meets at Akela?

A. Yes.

Q. As a matter of fact, there is a delay to at least one train whenever you make a meet?

A. That is right.

Q. One train or the other must head in and generally wait a little while until the other train goes by?

A. That is correct.

Q. The more meets you have the more delays will follow?

A. Yes, sir.

Q. In an eastward run from Lordsburg to El Paso, Mr. Ash, do you generally have rights over westward trains?

A. No, the westward movement is superior in the direction of trains of the same class.

Q. You would have rights over the westward drag?

[fol. 4824] A. We would have the right he gave you by train order.

Q. As a general thing when you are handling an eastward train with fruit blocks in it, are you given any superiority by train order?

A. There are times you are but there are times you are not. There are times you go in the sidetrack with those fruit blocks for the westward movements.

Q. Particularly for what kind? The westward manifest?

A. Yes.

Q. When you have the westward manifest freight El Paso to Lordsburg, you have generally, then, right of way over everything but passenger trains?

A. Yes, sir, you are given that by the timetable rights if you are running on schedule.

Q. When you have a westward manifest train, then you don't generally need to stop for any meets except passenger train meets, do you?

A. Ordinarily that is the procedure.

Q. You do also have to stop at times to take water?

A. Yes, you have to stop for water and your inspection points.

Q. You run 60 miles between inspection points?

[fol. 4825] A. Yes.

Q. Do you combine a water stop westward from El Paso with an inspection stop at any point within that 60 miles?

A. When we can, for instance, if we take water at Strauss we make our inspection there and if we have another stop between there and Deming, lots of times at Akela, we can combine the water stop with an inspection.

Q. Do you then make another inspection stop between Deming and Lordsburg?

A. Not if we stop at Deming.

Q. Do you generally stop at Deming?

A. Yes, it is very seldom that you are able to run Deming; it has been done a few times.

Q. That is almost invariably a stop?

A. Yes.

Q. I take it that your reason for trying to combine a water and inspection stop is to make as few stops as possible?

A. That is the general thought of operation, to keep going and make as few stops as possible.

Q. It is always desirable to make as few stops as possible, isn't it?

A. Oh, yes.

Q. About how long does it take you to make this westward [fol. 4826] trip from El Paso to Lordsburg with a manifest?

A. From El Paso to Lordsburg it varies, I have made it in five hours up to eight hours.

Q. Would five and a half or six hours or six and a half hours represent a fair average for that westward trip?

A. From my own experience I wouldn't say that anything less than six would be an average. I have no way of showing that unless I checked it over.

Q. Eastward do you make about the same time?

A. No, it is a longer trip. I think I was 10 hours and 45 minutes on my last trip east.

Q. That is rather a long time, isn't it?

A. We had some considerable delay. I am not sure that that is correct, but there was one trip recently that I recall that I was 10 hours and 45 minutes on duty.

Q. In your direct examination yesterday, Mr. Ash, you were asked if you knew what slack action was.

Mr. Polley: What page is that, Mr. Mason?

Mr. Mason: 4754. In the first place, there is such a thing as slack, is there not?

A. Sure.

[fol. 4827] Q. That is always present in every freight car, isn't it?

A. Yes, sir.

Q. Whether the car is standing or moving?

A. Yes, sir.

Q. It is necessarily built there, isn't it?

A. Yes, sir.

Q. Slack action takes place only when a train is moving?

A. In motion.

Q. It would be correct, would it not, to say that slack action is the effect of the slack in the train as may be produced by the motion of the train and the various factors attending the motion of the train?

A. The slack, as I said, each individual car has got its own amount of slack whatever the case may be, and it is developed by the movement of the train. If the train is standing, of course there is no slack action because the car is not in motion.

Q. It is only when the train starts to move or is in motion and various incidents occur that slack action develops, is that correct?

A. Yes.

Q. I am not trying to trick you into anything here nor [fol. 4828] am I trying to put words in your mouth?

A. I would never suspect that anyway.

Mr. Mason: Well, I am not entirely free of having tried to do that with some witnesses but I know better than to try to do it with you.

Q. Among the incidents which may cause slack action to be developed as you explained yesterday is where the train passes over a pinnacle or hump in the track?

A. That is one of them.

Q. Or where the train descends into a sag or hollow?

A. That is another.

Q. There will be, as the train passes along, a run-in followed perhaps by a run-out?

A. Yes.

Q. Another case where slack action may be developed is where there is an emergency application while the train is running, is that correct?

A. Not necessarily an emergency application.

Q. Let's go to the service application later. If there is an emergency application and the slack is out, there will be a run-in toward the point of the emergency, will there?

A. There will be a run-in and in many cases a run-out; [fol. 4829] the next instance is the run-out in lots of cases.

Q. Again, the development of slack action in the train depends upon the weight of the train as well as its length, doesn't it?

A. Well, the weight would carry with it some different conditions but each car itself has the slack in the draw bar, whether it is loaded or empty.

Q. Isn't this so, that slack action will develop in a train and the slack will be stretched or compressed, depending to some extent upon the weight of the load in the individual cars?

A. Yes, the load would have to do with compressing it or stretching it if it was located on the hind end. The weight of the engine on the front end of the train and the load on the hind end have a tendency to stretch the train on a steady pull, but when you go over the pinnacle or the hog-back we have spoken of is when you get that severe run-in with the load or the severe run-out when the engine goes over the next hump.

Q. Isn't this true also, Mr. Ash, that whether or not you will have slack action resulting in a shock to any portion of the train, particularly to the rear end, depends to a considerable extent upon the speed at the time the slack action develops?

[fol. 4830] A. Yes, the speed has a lot to do with it.

Q. Isn't it also true that the extent of the slack action depends to some extent upon the grade on which the train is moving?

A. Yes.

Q. For example, if the entire train is going down grade, the slack will be bunched, will it not, ordinarily?

A. That depends.

Q. But much more so than if it is going uphill?

A. If the engine is shut off and everything, engine and cars are coasting, naturally the cars will coast faster than the engine and it will be bunched, but you know they work a drifting throttle on those engines to keep the train stretched and try to overcome some of that slack and in that case it would not necessarily be bunched.

Q. If the train is proceeding upgrade, all of it, then of course the slack is going to be stretched?

A. That is right.

Q. Whereas if it is proceeding down grade, there is a tendency to be bunched or to be running free?

A. To be running free or stretched.

Q. And those conditions would have an effect upon the [fol. 4831] amount and severity of the slack action which would develop?

A. Yes.

Q. At one point in your testimony you spoke of the possibility of the train breaking in two or parting, causing slack action?

A. Yes.

Q. Have you any record or memory of any reportable casualty, I mean disability of more than three days in the case of an employee suffered on any train where you were conductor or brakeman because of a break-in-two of that character causing slack action?

A. No, I have no reportable accidents that I can recall.

Q. Did I understand you to say yesterday that there were various injuries occurring to trainmen which were not reported?

A. Yes, sir.

Q. There are two rules in the rule book which require reports to be made by the conductor in every case of personal injury, are there not?

A. Yes, sir.

Q. Rule 863, you are familiar with that?

A. I am, and I am also familiar with the rule in that [fol. 4832] same book that requires the trespassers to be kept off these trains, too.

Q. Mr. Ash, there is also rule F which requires reporting, is there not?

A. Yes.

Q. It may be impossible for a crew of an engineer and fireman and conductor and two or three brakeman to keep ten or fifteen trespassers off a train.

A. That is true.

Q. But it is not impossible for a conductor to make a written report, is it?

A. No, it is not.

Q. It is possible to comply with rule 863?

A. It is possible, but as Mr. Fail stated yesterday the reason it wasn't done in lots of cases—

Q. You don't mean to tell us that you with your experience and standing in the service would deliberately fail to comply with rule 863?

A. Oh, yes, I have a skinned arm on each side that I made no report on; it is the easier way out.

Q. Wouldn't it be fair to say that you hadn't complied with the rule because you considered the injury of so little consequence?

A. It was not of a three-day nature, that is true.

[fol. 4833] Q. You haven't lost any trips in freight service because of worrying over the possibility of slack action, have you?

A. I can't say I have but I worry a lot about it and I am not of a worrying nature, it is not my disposition but that is one of my worries if I have one, the slack action on those long trains.

Q. I think you testified that the only slack action accidents that you could recall occurred on trains of 70 cars?

A. It is true those were on 70-car train.

Q. Then I take it that your worry would become greatest if your train consisted of exactly 70 cars?

A. No, I didn't mean to infer that and I think I qualified that statement when I told you that I had never agreed with anybody that a 70-car train was not a long train.

Q. Yes, I remember that, Mr. Ash, but if your worry is based upon experience, your experience with personal injuries from slack action is confined to trains of exactly 70 cars, that is true, isn't it?

A. With my own personal experience, yes, but my experience has taught me that the danger in slack action [fol. 4834] starts just behind 50 cars and the more cars you have the greater the risk is.

Q. The danger from slack action, as I understand your testimony, particularly arises where an unforeseen emergency application takes place?

A. I believe the cases I was implicated in were undesired emergency.

Q. They were either undesired emergencies or emergencies where application was made by the engineer, or in one case by yourself, but unforeseen?

A. That was a desired emergency in the case where I pulled the air and injured the engineer.

Q. The application of the air as a result of a break-in-two causing a parting of the train line is an undesired and unforeseen emergency?

A. That is right.

Q. As I understand it, the application starts at the cars immediately adjacent to the break?

A. Yes, where the air hose parts.

Q. And proceeds each way from the break?

A. That is right.

Q. Then if you have a 70-car train, let us say, and the break occurs at the 50th car, between the 50th and 51st car, there will be 20 cars ahead of the caboose as to which the slack might run in?

A. That is right.

[fol. 4835] Q. That would be exactly the same as if there had been an emergency application of the air at the locomotive of a 20-car train, wouldn't it?

A. Not in all cases, because those 51 cars often stop quicker than your hind end and you will get the run-in.

Q. You will only get 20 cars run in?

A. If those 20 run into the 50, then you have the collision.

Q. That is all you would have?

A. Yes.

Q. You couldn't have anymore run-in than there were cars behind the break, could you?

A. Oh, yes, if those 20 run into the other 50 you have a 70-car run-in and it is really worse than the slack action would have been from an emergency stop with the train intact.

Q. How could that be?

A. It can be just like, for example, a collision with a 20-car train and a 50-car train.

Q. If the break takes place at the 50th car, then the 50th car stops first?

A. The brakes set first, it don't always stop first.

Q. Then the brake setting proceeds to the 49th and the 48th and so on up to the engine from the point of break?

[fol. 4836] A. Yes.

Q. The effect of the setting of the brakes on the 50th car is to stretch the slack in everyone of the cars ahead of the break, isn't it?

A. That is right.

Q. Then of your 20 cars remaining in the train the brakes start to set at the 51st car?

A. Yes.

Q. And they continue on back setting in emergency to the caboose?

A. Yes.

Q. And, by the way, that emergency application takes place very rapidly, doesn't it?

A. Just like that (snapping fingers).

Q. Your effect, where you have a setting of the air 20 cars ahead of the caboose will be the same whether the train consists of 50 cars or 70 cars, won't it? Let me re-frame the question and I think it will be clear. If you have a 50-car train and a break-in-two with an emergency application of the air at the 20th car ahead of the caboose, you will still have a 20-car run-in of slack, won't you?

A. If all of the brakes are equal on all cars, yes.

[fol. 4837] Q. All the brakes will set at once, won't they?

A. They all set.

Q. If you have a 70-car train and a break 20 cars ahead of the caboose, you will have a 20-car run-in?

A. In addition to the slack action you have the chance of a collision with your rear portion of your train running into the front portion of your train.

The Court: Has that happened in your experience, Mr. Ash?

A. Yes, sir, that has happened and the old rule is to try to keep the front portion of the train in motion until it is known the rear portion is stopped, to avoid that collision.

Mr. Mason:

Q. That collision effect, such as it is, would be the same whether there are 20 cars ahead of the break or 30 cars ahead of the break or 50 cars ahead of the break, it will be simply a collision with an engine and a number of cars that are stopped dead on the track?

A. Yes.

Q. And the force of the collision will be just the same because you have only 20 cars to run in?

A. You have 20 cars, but the more cars you run in the harder the stop is. If you are going down a street and run [fol. 4838] into a light automobile it wouldn't be as severe as if you ran into a heavy truck or a stone wall.

Q. I understand that these cars ahead of the break are all stopped, aren't they?

A. Yes, so would your stone wall be stopped.

Q. That is like colliding with a stone wall, as I understand it?

A. In lots of cases, yes, sir.

Q. Does it make any difference whether the stone wall is four feet thick or ten feet thick?

A. If it holds you, that is all the difference.

Q. When you run into 50 stopped cars, it is like running into a stone wall fifty feet thick, is it?

A. That is right.

Q. If you run into 20 stopped cars with the emergency set on them, it is like running into a wall twenty feet thick?

A. Yes.

The Court:

Q. If that condition arose and you did have that collision, that would be classed as a collision and not as a run-in of slack, wouldn't it?

A. It would be possible where the slack would come in, your Honor, would be the breaking in two, the break-in-two, [fol. 4839] or in ordinary cases would be called slack action.

The Court: What happened after the break-in-two?

A. Your brakes go on and you don't always have this collision I am talking about but it does happen.

Mr. Mason:

Q. Insofar as the effect on the men in the caboose is concerned that would be classed as a break-in-two with slack action resulting in injury to men in the caboose if they were hurt?

A. Yes.

Mr. Mason: We have some instances on that on both long and short trains in the exhibit, your Honor. That is all I have for Mr. Ash.

The Court: We will take our morning recess at this time.

(Thereupon a short recess was taken after which proceedings were resumed as follows.)

[fol. 4840] The Court: You may proceed.

The Witness A. T. Ash was recalled to the stand, and testified further as follows:

Mr. Mason: Would you mind if I asked the witness two or three more questions?

Mr. Polley: No, go ahead.

Mr. Mason: Mr. Ash, I understand you to say that you have had derailments because of burned off journals?

A. Yes, I had one.

Q. When?

A. It has been quite a few years ago, I would say along in 1926 or '27 at Cazador, Arizona, if that is the one you are referring to. It is the only one I recall.

Q. Have you had any derailments because of a broken flange, broken wheel?

A. Yes, had one at Rita, sixteen miles out of Tucson.

Q. How long ago was that?

A. Well, it was possibly in either one of the two years, 1926 or '27. They weren't very far apart.

Q. Was there any personal injury in either one of those?

[fol. 4841] A. No; the case at Cazador, we were dragging upgrade very slowly and this journal broke off and we were stopped all intact, there was no wreck of cars, it was just one pair of wheels off the track.

Q. Both of those were on short trains?

A. Well, they were both within the seventy-car limit, I don't recall the exact number of cars.

Q. Now, have you had any derailment or other reportable accident due to slid, flat wheel on a car?

A. I don't recall one just now. If there was, there might be something that would refresh my memory, I don't recall one.

Q. Have you ever had a derailment due to a dragging brake beam?

A. I believe I had one at Chiricahua some years ago heading into a side-track, there was a derailment of a refrigerator car.

Q. That would be 1926 or '27?

A. Somewhere along there.

Q. At Chiricahua; is that in Arizona?

A. Yes, east of Douglas.

Q. You have had various cases of break-in-twos from drawbars pulling out, have you?

A. Yes, I have had my share of them, I think, I couldn't [fol. 4842] tell you how many without looking at the record, I would usually recognize them or recall them.

Q. Do you remember a break-in-two at Akela on Christmas day of 1936?

A. I do not.

Q. From a drawbar pulling out?

A. Yes, I do. A boxcar broke off.

Q. That was a long train, wasn't it, ninety-nine cars?

A. As far as I remember, it was stopping for water.

Q. There was no casualty to anybody?

A. No, I believe we were on the ground when the final—

Mr. Strouss: I think if the defendant has a record of this, they should produce it. Now, to ask the witness the length of trains and details of that kind, they have a record, now, what the facts are should be brought into the record.

Mr. Mason: Why not test his recollection. He has shown he has a pretty good memory here.

Mr. Strouss: We certainly have a right to have those records so we will know what the facts are.

Mr. Mason: Well, let the witness tell you; he is your [fol. 4843] witness.

Mr. Strouss: This is a matter of record. We are not compelled to rely upon memory in a thing of this sort.

The Court: No. The objection is overruled.

Mr. Strouss: I am now requesting that they be required to produce this record so that we may have a chance to examine it.

The Court: Which record do you refer to?

Mr. Strouss: As to this train they are talking about, it is a matter of record. There is certainly no reason why they should conceal it from the Court or from the counsel for plaintiff, either one.

Mr. Mason: We are not using it to make any case of our own. I don't see why we have to accede to that demand.

The Court: You may proceed.

Mr. Strouss: The motion that they be required to produce is denied then, I take it?

The Court: You are referring to the particular train?

Mr. Strouss. That he just asked about. He asked him to give the length of train. There is no handicap or burden upon them to produce.

The Court: No, if the record is available, it may be [fol. 4844] produced.

Mr. Mason: If it is available it will be produced. We will submit for the examination of counsel—I don't propose to make it of record myself—a copy of the telegram, this is all that we have, showing the incident from the chief dispatcher addressed to the superintendent and certain other division officials dated at El Paso on December 25, 1936.

The Court: That is your only record?

Mr. Mason: That is the only record we have in the courtroom and I think that is all we have indicating the incident. It does show, as Mr. Strauss will see from reading the telegram, the length of the train, the place, the fact that the train broke in two, and the amount of the delay. Of course, there was no form T report, because, as Mr. Ash has told us, there was no personal injury involved.

The Court: Were you through with your cross-examination?

Mr. Mason: Yes, I just had those few additional questions that I overlooked.

[fol. 4845] Redirect examination.

By Mr. Polley:

Q. Mr. Ash, I believe you testified that in recent years the draft gears had been made heavier and what you called harder. Now, what effect do heavier draft gears and harder draft gears in connection with heavier equipment in use have on the severity of shock on the rear end of the train?

A. It increases the severity of shock in accordance with the increased drawbar, increased weight of the car and the drawbar which doesn't have the spring cushion effect to them which they once had.

Q. Now, yesterday, on page 4795 you were asked this question: "Can you find anything in the rule book as to the placement of livestock at the head end of the train?" And you answered, "No, sir." And you were asked this question, "As a matter of fact, it is permissible to place livestock at any point in the train that the drover or caretaker handling it, desires?" And you answered, "You can place them on the hind end of the train if the caretaker assumes the responsibility and you have to start and make notations on your stop report that they were placed in the rear of the train by request of the caretaker." I want you [fol. 4846] to notice this rule: "Do not divert or reconsign livestock on request of attendant. Such instructions must come from shipper or consignee. In cases where livestock is handled on the rear end of train at the request of caretaker, please make notation to that effect on livestock report form, 2871. This is done so as to give freight claim agent record showing that livestock was handled at rear end of train at specific request of attendant. Livestock claim agent will use this information in handling claims. Please watch

this matter closely and see that this notation is shown on all forms 2871 in cases mentioned above. Livestock will be handled at the head end of trains unless instructions are received from the caretaker to handle on the rear end of the train or equipment is rear end equipment." Can you identify that rule?

A. Yes, that is Bulletin Nos. 70 and 71 of the reissue of 1930, under which we are still operating.

Q. Have you ever been notified by the officials of the company that that rule is not in effect now?

A. I have not.

Q. Do you operate under that rule at present?

A. We do, most specifically we do.

[fol. 4847] Q. And what would happen if you did, as a conductor, place shipments of livestock on the rear end of freight trains?

A. I don't know what would happen, but I wouldn't take the responsibility on myself to place livestock on the rear end of the train. I would have to have instruction from proper authority to do so.

Mr. Strouss: I would like to ask a question in connection with this train at Akela.

Q. That record submitted by counsel shows that was a train of seventeen loads and eighty-two empties. It also shows that two trains, C-1010 and CY-1010, were each delayed forty minutes by that. Do you remember the delay?

A. I remember there was a delay, but I wouldn't attempt to say what the delay was, except to my own train as stated by my own record.

Mr. Strouss: I think I correctly stated the record, did I not, Mr. Mason?

Mr. Mason: Well, the telegram doesn't show that C-1010 and CY-1010 were separate trains, only that they were separate blocks, which is true, but they may have been consolidated. You recall that the evidence in this case shows that two blocks are consolidated.

[fol. 4848] Mr. Strouss: If I just might have that to read into the record.

Mr. Mason: The blocks were each delayed about forty minutes.

Mr. Strouss: I will have this copied into the record.

The Court: Suppose you read it, Mr. Strouss.

Mr. Strouss (Reading): "El Paso, December 25, 1936. HSF, JPN, HGM, WGR, AGN." Those are, I take it, stations?

Mr. Mason: They are division officials, starting with H. S. Fairbanks and ending with A. G. Newell.

Mr. Strouss: "Drag West Engine 5019, Conductor A. T. Ash, Engineer, J. McNamee, with 17 loads, 82 empties, while heading in at Akela about 505 A. M. Date to meet first and second 980, pulled drawbar out East end of a Car company ties. Delayed C-1010" and then there are some letters that are blurred out.

Mr. Mason: I presume that was a re-write over. They don't belong in the message.

Mr. Strouss: That is as I read it. Then, "CY-1010 each about forty minutes." Signature, "J-650. HGB 650 AM."

Now, counsel has handed us the delay reports covering the [fol. 4849] period that he was questioning him on in cross-examination, delay reports both on trains in which he was conductor and on trains on which he was brakeman.

Mr. Mason: I think it should be specified that the time returns and delay reports cover the calendar year 1940 in trips of this witness in both freight and passenger service.

Mr. Strouss: Now, in making a computation of the trains on which he operated, that is, with respect to the length of those trains, if counsel will have someone for the company check this after I have made it, probably it could be put in by stipulation.

Mr. Mason: Certainly, we don't need to keep Mr. Ash for that purpose.

Mr. Strouss: Mr. Ash, concerning the possible consolidation of those two trains that were mentioned in this telegram, do you remember whether they were two trains, or a consolidated, C-1010 and CY-1010?

A. According to that message that you read, they were two trains. It said, "First and Second 980," which is two trains.

Q. You don't have any independent recollection yourself? [fol. 4850] A. Not unless I made notations on my delay report.

Mr. Strouss: That is all.

Mr. Polley: That is all.

(Witness excused.)

LOUIS A. FAIL was recalled to the stand and testified further as follows:

Cross-examination.

By Mr. Mason:

Q. Mr. Fail, you were first employed by the Southern Pacific, weren't you?

A. First employed by the Southern Pacific?

Q. Yes, not by the El Paso and Southwestern?

A. Yes, that is right, the Southern Pacific.

Q. And you hold your seniority as a Southern Pacific conductor?

A. Yes, sir.

Q. Your seniority extends all the way from Yuma to El Paso?

A. That is right.

Q. Your home is at El Paso?

A. Yes, sir.

Q. You reside in the state of Texas?

[fol. 4851]. A. Yes, sir.

Q. Your seniority is like that of Mr. Ash in that it permits you to work at any point between Yuma and El Paso?

A. That is right under certain conditions, depending upon the merger agreement.

Q. Well, as a Southern Pacific conductor, you have some priority, don't you, over the lines formerly owned by the Southern Pacific?

A. That is right.

Q. You also have some rights—

The Court: Just a minute. You said, "Formerly owned by the Southern Pacific."

Mr. Mason: Yes, I am distinguishing between those and the lines formerly owned by the El Paso and Southwestern.

Q. You also have rights over the lines formerly owned by the El Paso and Southwestern?

A. After a certain number of crews are assigned on these other properties, then the former Tucson division employees come in there on that line.

Q. By the way, this seniority district between Yuma and El Paso is known for the purposes of the trainmen's and

conductors' agreements as the Tucson seniority district, isn't it?

[fol. 4852] A. Tucson-Rio Grande seniority district, yes, sir.

The Court: And what is your seniority, Mr. Fail?

A. You mean my date of employment?

Q. No, I believe you gave us that. But your number.

A. I think it is about thirty on the protected list, and it is about sixty or under on the consolidated; I haven't checked that up lately.

Mr. Mason: As far as the protected list is concerned, there aren't very many men who could displace you at El Paso then, are there?

A. No, not too many any more.

Q. Practically all of them are in passenger service?

A. Well, I haven't had any reason to check up lately, but I think there are only about 16 between myself and passenger service, or thereabouts.

Q. Over the entire district?

A. Yes, sir; well, on the main line.

Q. I mean on the entire seniority district, main line.

A. On the old Southern Pacific district.

Q. The fact that you work out of El Paso is entirely a [fol. 4853] matter of choice with you; you are not forced to work there?

A. Well, in the beginning, I had two choices in the beginning when they hired me; when I asked for a job, they sent me over here at Benson, which was very undesirable at that time, and I stayed over there three months and when I came back in here, they told three other brakemen and myself to catch a certain train and go to El Paso, and I told them I didn't want to go and they said, "Well, you are going to El Paso, or else." So I went to El Paso along with three other fellows by the name of Stump, Cane, and Jackson.

Q. That was prior to 1916?

A. I will say it was. It was when I first hired out here. I went there and kept on and I liked it, I met my wife, we were married, her folks live there, I bought my home, I raised my children and I educated my children there, and they are married now and that is my home.

Q. But, Mr. Fail, you hadn't since you hired up with the Southern Pacific always lived at El Paso, had you? You went over to the Coast division for a while?

A. Yes, sir.

Q. Then you returned to El Paso by choice?

[fol. 484] A. More necessity than choice.

Q. Well, in so far as any action of the company was concerned, it didn't force you to return from San Francisco to El Paso?

A. No, there was some health mixed up in that.

Q. And the company doesn't now compel you to stay in El Paso?

A. No, sir.

Q. If you wished, you could exercise your seniority to work out of Tucson or Yuma?

A. That is right.

Q. But you don't want to?

A. No, I don't want to.

Q. You haven't suffered any personal injury resulting in more than three days' disability in a freight or passenger train accident on a moving train in the last eight years, have you, Mr. Fail?

A. Well, I was injured at Deming, New Mexico, in 1938, I think it was, I can't be sure about these records, but I was regulating a car of fruit, pulling up the lid on the ice box and ruptured myself, and I lost the biggest part of three months, I think. I was operated on.

Q. Was the train moving at the time?

A. No, the train was standing still taking water.

[fol. 485] Q. You wouldn't say that the length of the train had anything to do with the injury?

A. It had nothing to do with it.

Q. As a matter of fact, the train was less than 70 cars?

A. I wouldn't know, I don't have those records. If I had records, understand, for all my service here, this room probably wouldn't hold them. I don't have those records, I don't know. I will state, since you asked the question of being injured, I recall of being injured and having a couple of ribs broken at Columbus, New Mexico. I believe that was along about 1934. I testified yesterday that my glasses were broken. An air hose pulled off near the head end of this train; but I have been injured many a time.

Q. Well, this injury of yours at Columbus, New Mexico, didn't keep you from working for more than three days during the next ten days following the accident, did it?

A. Well, it seems to me like I did, but I wouldn't testify, because I don't recall; it has been six or seven or eight years ago, I don't know, I can't remember those things.

Q. You have never, other than this incident at Columbus, the extent of which you don't recall, been injured in a slack [fol. 4856] action-casualty on a long train, have you?

A. Yes, sir.

Q. When?

A. Not a reportable accident, I don't suppose, but I have been injured so many times and slammed around so much that we don't report those things.

Q. You recall Rule 863, don't you?

A. Oh. I am familiar with that, yes sir.

Q. Also Rule F in the Rule Book?

A. Yes, sir.

Q. You are not going to tell us here that as a conductor with your long service you don't undertake to comply with those rules?

A. I will tell you yes, if you will listen, I don't comply with them and there are others that don't comply with them; and the fellow that testifies here that he does comply with that book in toto, he is making a false statement.

Q. Is there anything that renders compliance with Rule 863 impossible?

A. No, sir, nothing impossible.

Q. Then your reason for failing to report these cases where you say you suffered injury, or others in your car suffered injuries, is because the injuries are of insufficient [fol. 4857] consequence to justify a report?

A. That is right; that is getting more to it. You get a bad blow, you get bumped around, but I would think you would be a jelly if you had to report every little slam or scratch you got when you know it isn't going to cause you to lose any time.

Q. Then you agree that you have never had a reportable slack action casualty on a long train or short train?

A. No, I wouldn't say that, because I have had nothing to refresh my memory from the records, I wouldn't say that.

Q. You have experienced break-in-twos on trains on which you were conductor?

A. Yes, sir.

Q. On both long and short trains?

A. Yes, sir.

Q. And confining your answer to the period since and including March, 1933, do you recall any reportable injury to a member of the crew, including yourself, occurring in connection with a break-in-two on a train of any length?

A. Well, I recall Brakeman D. Kurtz being knocked from the top of the caboose at Campbell Street in El Paso, Texas. [fol. 4858] Q. Did he lose any time?

A. Oh, I think 21 days.

Q. When did that take place?

A. Well, I would say it has been eight years ago, or seven or six, I don't know.

Q. What was the length of the train?

A. I wouldn't be able to even guess.

Q. In what direction was it moving?

A. Eastbound.

Q. You were just about to come to a stop in the El Paso yard?

A. Yes, sir, and it appeared that when the passengers were getting off the train that someone stepped on a cutting lever and we stopped before he expected it.

Q. This happened on a passenger train, did it?

A. No, on a freight train.

Q. You said passengers were getting off the train.

A. Hoboes, trespassers; whatever you might want to term them.

Q. This wouldn't be an accident that happened on November 16, 1933, is that your recollection?

A. No, I think it was later than that. That would be nine years ago. No, this fellow has been braking for me eight years, I think, or maybe possibly he was—does it [fol. 4859] state there that he was braking with me at that time?

Q. I haven't any record, I have a mere summary that there was an accident to Brakeman D. Kurtz, spelled the same way you spell it, that took place at El Paso, Texas.

A. Well, he was injured twice there, but I don't recall whether that was the time with me or with someone else, but he got a finger broke. Does it say anything about a finger?

Q. "Third finger on left hand dislocated, and fourth finger of left hand bruised."

A. I think that is the time, I can't state for sure.

Q. This doesn't agree with your recollection as to the direction of movement. This indicates an Extra west.

A. No, this was an eastbound I have reference to.

Q. You don't recall any accident on a westbound Extra to Brakeman Kurtz?

A. I recall the train parting when we were being shovied out of the yard by a switch engine and I had gone in to sit down to the desk to begin my clerical work, and this was what we call a soft belly caboose, a wooden underframe [fol. 4860] caboose, and I don't remember what happened to this fellow Kurtz that time, but I clearly remember what happened to me, that the trespasser had stepped on a cutting lever, and I had my knees underneath the desk like this, we broke in two, and that switch engine kept shoving ahead, and my knees were pinned underneath this desk, and I didn't think I was going to get away. I didn't get away until the tension was taken off.

Q. Did you lose any time?

A. Oh, no, but I was scared out of years of longevity, I think. I don't know whether I lost time or not over it. If you see a locomotive coming at you at the back door, I don't know whether you would lose any time or something else.

Q. How long ago was that, Mr. Fail?

A. Oh, I don't know; it has been quite a little while ago, seven or eight years.

Q. Considerably longer ago than that wasn't it?

A. I don't know.

Q. Haven't all of those soft belly cabooses been replaced and retired quite a long time ago?

A. Yes, but there is one in service out of Lordsburg, New Mexico, No. 118, which is an emergency caboose there in [fol. 4861] service, and there is a regularly assigned caboose Sam Allen has, 115, out of El Paso, on the New Mexico end.

The Court: You are assigned a regular caboose and you keep that caboose whenever you are on the road?

A. Yes.

Mr. Mason: Your assigned caboose is a steel under-frame?

A. Yes, sir, I will say it is.

[fol. 4862] Q. You spoke of and read into the record rule 99, flagging rule. That is a rule which is practically universal all over the United States, isn't it?

A. Yes, sir, just very minor changes on different railroads but anyone who understands rule 99 would be able to perform his duties on any of the railroads in the United States or Canada, I think.

Q. It is essentially for the purpose of preventing head-end and rear-end collisions while trains are standing?

A. More rear-end collisions. There is another rule that pertains to the head end. That is more so for the rear end.

Q. Is it any more difficult to comply with rule 99 so far as the protecting of the rear end is concerned with a train consisting of more than 70 cars?

A. I wouldn't say that it would be, no.

Q. You don't use retainers in any part of your territory, do you?

A. No, sir.

Q. When it comes to setting hand brakes on cars that are set out on sidings or when the train is tied up with the engine detached, that duty is not affected by the length [fol. 4863] of the train, is it?

A. That would depend on where the car was located in the train set out. Yes, that would have some effect on it, but not on the setting of the hand brake, no. The hand brakes could be set regardless of where the car was located in the train after it was placed on the siding. That wouldn't have anything to do with it, the length of the train might interfere in the difficulty of setting the car from the train. If it was a long ways back from the engine, it would take a longer time to set it out.

Q. But the job of setting the hand brakes on a car is a job associated with the individual car, isn't it?

A. That is right.

Q. It is wholly independent of train length?

A. That is right.

Q. Have you ever had a derailment as the result of a brake beam coming down?

A. Yes, sir.

Q. When and where?

A. That would be pretty hard to say. I remember having a derailment at Tacna, Arizona, due to something dragging. Do you have that before you?

Q. That was quite a long while ago, wasn't it?
[fol. 4864] A. I don't know.

Q. It is a long while since you have worked on the west end, isn't it?

A. Yes, I was down at Yuma—in 1916 when I was promoted, you spoke heretofore of having my choice where I could work, I was you might say drafted with seven or eight other conductors and we went to Yuma about the first of June. When I say "drafted," that is just about what it takes to get you to go to Yuma on the first of June.

Q. I appreciate it.

A. I worked there in 1916 and 1917 and I also worked there by my own choice during the construction of the new railroad through Phoenix. I went over on the construction train March 10, 1925, and I remained over there about seventeen months and part of the period was down at Yuma.

Q. Then this derailment at Taena took place either in 1916 or 1917 or while you were at Yuma in 1925?

A. Around 1925.

Q. That is the one you recall, is it?

A. It was a carload of glassware that was derailed at Taena. Then I had a derailment recently due to what we call the AC key that goes through the steel underframe of the car and the draft gear. They have slots in this steel [fol. 4865] draft gear that goes underneath this car here. They are long slots, probably eight or ten inches long, and these follower plates are on the inside of this steel center sill so that this slot on the center sill of course is stationary but your draft rigging will move and this key goes through here, through the butt of the shank of the draw bar to hold this draw bar, the end that pulls the car and that key lost out west of the west switch at Anapra, New Mexico, allowing the draw bar to fall in the center of the track, parting the train and derailing one pair of wheels.

Q. That derailment was not due to a brake beam coming down, which was my question, but due to the losing of the AC key, was it?

A. I think so.

Q. Did that take place recently?

A. Within the past six months.

Q. That was a train of 70 cars, wasn't it?

A. I wouldn't know.

Q. Does that agree with your recollection?

A. No, because I have no record. I can't agree with anything I don't know. If I had my record here or something to refresh my memory from your records I would go along with you on it but I don't have anything. I remember [fol. 4866] losing an AC key or a carrying iron out of a reefer train at Myndus, New Mexico. That allowed the draw bar to fall down and we turned over two refrigerator cars and derailed one or two.

Q. When did that take place?

A. It has been a long time ago, may be ten years maybe less.

Q. Was anyone injured in this derailment at Anapra that you recall?

A. No.

Q. Was anyone injured in this Myndus derailment?

A. I don't recall, it seems to me like the flagman, I don't remember who he was, but it seems to me that the flagman was slammed around but I don't recall.

Q. You don't recall, do you, what the weight of the chain is that you use in emergency when the couplings fail?

A. I stated here yesterday it would weigh from three to six hundred pounds, I think, and I will still stick with the weight.

Q. Do you know how long it is?

A. No—I know how long it is necessary to be to go around the coupler shank and fasten to either the other draw bar [fol. 4867] or the transom of the next car and it would have to be at least six feet, maybe eight.

Q. You would not agree that this chain actually weighs on the scales, 128 pounds?

A. I would bet my life that it will weigh more than 128 pounds and I will say further to you or to any other man in this room he cannot pick up that chain and carry it 50 car lengths without resting and I will also say I can carry 128 pounds a long way but I can't carry that chain.

Q. I think you gave us some expression of the average length of a car. Didn't you say that they run from 30 feet to 65½ feet in length?

A. To 66 feet, 6 inches.

Q. Freight cars?

A. Yes, sir.

Q. Those very long cars, 66-foot cars are mostly flatcars, aren't they?

A. They are gondola cars.

Q. Would you say that a fair average of the length of the cars you will get in the general run of freight trains would be about 45 feet from coupler face to coupler face?

A. That is pretty hard for me to state. If you will eliminate the refrigerator cars—no, I wouldn't care to make [fol. 4868] a statement on that because I don't know.

Q. Have you ever had a reportable casualty take place on a train on which you were employed either as conductor or brakeman by reason of the use of the conductor's valve?

A. I can't tell you from memory. I have pulled the conductor's valve many and many a time and as I stated before I have nothing before me to refresh my memory from these records you are reading from.

Q. I am not reading from any record, I am asking you. You remember that you have pulled the conductor's valve many times and you remember what the results are but you don't remember whether you caused any casualty by doing so?

A. I can remember that I have made out many a 2611, that is our accident report, for myself or other members of the crew that were injured.

Q. But not in connection with the use of the conductor's valve?

A. That I don't know, maybe, possibly so.

Q. Have you ever had a reportable casualty—you understand what I mean by reportable casualty, one reportable to the Interstate Commerce Commission?

[fol. 4869] A. Three days' time lost.

Q. More than three days' time lost in the ten days following the accident?

A. Yes.

Q. Have you ever had a reportable casualty on a train on which you were employed as a result of failure to see or understand a hand signal?

A. Yes, sir.

Q. When?

A. You mean a reportable casualty of one of the employees injured?

Q. Yes, where an employee was injured or killed as the result of failure to see or understand a hand signal?

A. I recall one time at Deming in a sand storm, the sand storm was so bad that the dispatcher tied two trains up. I was the conductor on one train, the first one to arrive there and conductor E. L. Geary was the conductor on the second train to arrive there and one of the other brakemen and myself were assisting conductor Geary to set out a car of merchandise to the house track, freight house, assisting him in passing signals and we injured a freight house employee there. I recall an instance where there was no personal injury—

Q. (Interrupting:) Just a moment, I want to ask you [fol. 4870] about this incident at Deming. You say you injured this freight house employee. Was he concerned in the movement there?

A. He was concerned in the unloading of the cars there?

Q. This accident occurred while you were switching a single car to the freight house?

A. We were switching a car from the train to the freight house.

Q. The train itself was standing at the time while the engine was moving with one or more cars?

A. Yes.

Q. Did you undertake to signal to this freight house employee?

A. No, he was in the car.

Q. Were you undertaking to pass signals to the engineer?

A. That is right.

Q. During a sand storm?

A. Yes, sir.

Q. You have never had, then, an accident occurring in connection with the movement of a train where failure to see or understand signals contributed to the accident?

A. Accident of the train?

Q. In connection with the movement of a train. This I [fol. 4871] understand was purely a switching movement.

A. You mean where personal injury was involved?

Q. Where a reportable personal injury was involved, yes.

A. I can't make a statement like that.

Q. You don't recall any?

A. July 4, 1940, was no different to July 4, 1920, to me, and I have nothing before me to refresh my memory on these things. If it wasn't something that materially affected me, I don't know why I would have any reason to recall all that stuff.

Q. The only thing that prompts my question is your having spoken about the difficulties in passing signals and I want to know what particular casualty you have in mind, if any, occurring as a result of the difficulty of passing or understanding signals on long trains. If you don't recall any, that is all my questions.

A. Just a moment—

Mr. Mason (Interrupting): There is no question before you, your Honor, I object—

The Court: Are you starting to answer this question?

A. Yes, sir.

[fol. 4872] Mr. Polley: Counsel answered the question himself.

Mr. Mason: I asked no question. Read the record.

(The record was read by the reporter as follows: "Mr. Mason: The only thing that prompts my question is your having spoken about the difficulties in passing signals and I want to know what particular casualty you have in mind, if any, occurring as a result of the difficulty of passing or understanding signals on long trains. If you don't recall any, that is all my questions.")

The Court: Do I understand that you recall one?

A. Yes, sir, that is what I am trying to tell him.

The Court: Go ahead.

A. This happened at Malpais, New Mexico, where signals were misunderstood. The thing that threw me off my guard was the fact, whether this was a reportable injury I can't remember, but I do recall plainly that due to the misunderstood signals the caboose and two cars on the rear ahead of it were turned over and I ran down a 30-foot embankment and fell into a cat-claw bush and I don't recall whether I lost any time or not but I clearly remember [fol. 4873] it. That was probably about 1927.

Mr. Mason:

Q. Wasn't it December 9, 1928?

A. It could have been.

Q. That was backing a train out of a siding?

A. That is right. It was dark. The one brakeman was giving a violent stop sign and swinging his lantern trying to stop him. The head man completed the signal which meant to come on back. One was trying to stop by giving

the signal this way and the head man took it for a back-up sign and he gave it to the engineer. He completed the circle and we backed over the derail.

The Court: The court will be at recess until 2 P. M.

(Thereupon the court stood at recess until 2 P. M., April 16, 1941.)

[fol. 4874]

April 16, 1941, two o'clock P. M.

Proceedings were resumed at this time as follows:

The Court: You may proceed with your cross-examination.

The Witness, LOUIS A. FAIL was recalled to the stand and testified further as follows:

Mr. Mason: Mr. Fail, this derailment at Malpais that we were talking about was the subject of an investigation at which you were present, was it not?

A. Yes, sir.

Q. And you made various statements at the investigation in answer to questions from the investigating officers?

A. Yes, sir.

Q. One of those statements was to the effect that the train was 54 cars?

A. Yes, it wasn't too long a train.

Q. Another statement was that you admitted at the investigation that you didn't know what signals were given on the train, you didn't see them.

A. I was unable to see them until after it was brought out, after I talked to the brakeman, what actually happened.

[fol. 4875] Q. You yourself didn't see any signals given?

A. No, sir.

Q. Now, there were no reportable personal injuries to any of the members of the crew, were there?

A. No; I only brought up that case to show that signals can be confused.

Q. You have no case in mind, have you, where reportable casualty has occurred as a result of failure to see or understand a hand or lantern signal given while the train was in motion running forward?

A. Oh, I am sure that it has happened many times, but I don't have any records.

Q. Any train that you have seen or been on?

A. I have in mind one train that one of the trespassers came back over the top to the caboose to tell me that a one-legged man and a one-armed man had had his other arm cut off, and this happened at Sepa, New Mexico.

Q. Was this one-legged man, or rather the one-armed man that had lost his arm a trespasser?

A. Yes, sir.

Q. I am asking you about members of the crew, of course, or other persons lawfully upon the train, not trespassers.

[fol. 4876] - A. Well, I don't have any records to refresh my memory, but with the service that I have had, I feel safe in stating that there has been many, but I am unable to state from memory.

Q. You spoke of having to rebrass journals. It is a fact, is it not, Mr. Fail, that during the year 1940 you didn't have any occasion, when you had to rebrass a journal?

A. Oh, I am positive that I did rebrass journals in 1940.

Q. Last year. Do you remember the date and the place and the train?

A. No, that is pretty hard for me to keep all of that in my mind. I would call your attention to Lizard, New Mexico. Do you have one there at Lizard on a car of meat or beer?

Q. I have a reference to a 57-car train at Lizard on July 10, 1940, first 981, would that be it?

A. That sounds like it if it was on a Sunday morning. That would be, as I recall it, one Sunday morning we had to stop at Lizard and brass a car of meat, and Lizard is eleven miles out of the terminal.

Q. July 10, 1940, wasn't a Sunday.

[fol. 4877] - A. Well, I wouldn't say, but anyway I know that I brassed a car at Lizard, New Mexico.

Q. In 1940?

A. Well, I think that I did.

Q. It would appear on your time return and delay reports, would it not?

A. Yes, sir.

Q. Now, this reference that I have shows you had a hot box on July 10, 1940 at Lizard, but contains no reference to rebrassing. By the way, do you know how many hot boxes you had on all of your trips in 1940?

A. That is just out of the question. I have no way with out refreshing my memory from your records and I don't

keep records of these trifling matters that are so routine in my daily performance of my duties.

Q. They would however appear on the time returns and delay reports?

A. Yes, sir; they wouldn't appear on the ones that were not reportable or caused delay.

Q. If a hotbox was of sufficient consequence to cause a delay to your freight train, it would appear on your time return and delay report?

A. If it caused delay, yes, sir.

Q. And if it wasn't of sufficient consequence to cause a [fol. 4878] delay, it would be exceedingly unimportant, wouldn't it?

A. No, because we have brassed cars at Deming by the flagman while we were doing other work that was necessary at that station, like setting out and picking up cars, that was sufficiently close to the caboose that there was no delay charged against that car.

Q. Did the flagman do it by himself?

A. Yes, sir.

Q. Then the rebrassing of a car is something that one man can do by himself?

A. Yes, one man can do it after he gets the tools there.

Q. While the remainder of the crew are doing some other work?

A. Yes, sir.

Q. Then it isn't always the exacting operation that you described in your direct testimony?

A. Yes, sir, it is, because we will run that engine down by the caboose and load our tools on the engine and haul it up and dump it off there and maybe go do something else while one man brasses the car.

Q. As a matter of fact, the use of the engine in order to save steps carrying the tools and appliances is quite [fol. 4879] common, isn't it?

A. That is where you have sid. rack, where you have a track, but there are so many times that you stop between stations with hot boxes, they don't have any particular place or any particular minute, or hour, to break out on you.

Q. Or have any particular train length, do they?

A. No, sir.

Q. They are just a defect of the individual car?

A. That is right.

[fol. 4880] Q. You have been a conductor in passenger service according to your direct testimony?

A. Yes, sir.

Q. You made six trips last year, did you?

A. I said that I thought I had made that many, possibly I made more.

Q. You made 297 trips in freight service last year as a conductor?

A. I wouldn't know.

Q. You worked pretty steady all the twelve months, didn't you?

A. Yes, sir.

Q. Your time returns and delay reports would show the total number of trips that you made?

A. Yes, sir.

Q. You don't know whether your total number of trips was approximately three hundred then?

A. No, sir, I could check it from my records at home as to my earnings but I don't have those records with me.

Q. Did you say in your direct testimony that you had two occasions when journals were burned off?

A. Yes, sir.

Q. When were those?

A. I think that one was about July 3d or 4th or 5th or something like that, 1922, along in there I think when I [fol. 4881] dropped a journal at Lordsburg, one milepost.

Q. I have a reference to that in your testimony. Do you recall the date of the other?

A. I think the next one was the following fall of 1923 between Chappel and Aden.

Q. Those two are the only burned off journals that you recall?

A. The company said they were burned off. I thought maybe one of them was broken off.

Q. This case at Lordsburg, one milepost, is the case that you described at considerable length as having occurred on a car with a heavy load of cement?

A. That is right.

Q. According to your testimony that was a train of 25 cars?

A. Oh, no, that was a train in the neighborhood of 70 cars.

Q. You don't recall whether it was more than 70?

A. I hardly think it was.

Q. Was it a westbound manifest?

A. No, it wouldn't be classed as a westbound manifest I don't think. I think we had empty refrigerator cars and [fol. 4882] these 18 or 20 cars of cement for some contractor at Phoenix on highway construction. We had fought that hotbox hard all the way in order to take it in.

Q. That hotbox resulting in a burned off journal was due to the heavy loading of the car, wasn't it?

A. I wouldn't say that because there were other journals underneath the car. There were three more underneath that car that didn't burn off and that one did so I wouldn't lay it to the load in the car. I think there was something faulty in that journal; but the management didn't.

Q. Heavy loading of the car may cause a hotbox?

A. That is right.

Q. As a conductor in passenger service you have occasion to pass signals to the engineer, do you not?

A. Yes, sir.

Q. That is by the use of the air signal in each car?

A. That is right.

Q. That is according to the code contained in rule 16 of the transportation book of rules?

A. That is right.

Q. You spoke of broken knuckles, Mr. Fail. Did you have any cases of broken knuckles causing actual break-in [fol. 4883] two of the train in 1940?

A. Yes, I am sure that we did.

Q. Will you tell me the place and date?

A. No, I don't recall right now. It seems to me like you might find one there at Deming and you might find one at Rutter.

Q. Those would be in 1940, would they?

A. I don't know.

Q. They would show up on the time returns and delay reports?

A. That is right. I remember the one in Rutter that we delayed the morning passenger train about twenty minutes getting this knuckle replaced.

Q. That, you are satisfied, was in the year 1940?

A. I just think that, but it could have been 1939 and could have been 1938. Those things are more or less like meeting someone you know on the street and two weeks later you

don't know what day you met him but you remember seeing him up here on the street. It is just part of our daily routine. I don't have any reason to remember those things. I remember that journal that I dropped mighty clearly because they fired me for eleven days and those are kind of little reminders and they told me there wouldn't be [fol. 4884] any more of those. That is one reason why I am pretty particular about a hot-box because the company told me there wouldn't be any more of those. In other words, they would run me off so I am trying not to drop any more.

Q. All of the cases where you had broken knuckles causing a parting of the train will show up in your time returns and delay reports?

A. That is right—no, I will take that back, I won't testify to that because there isn't an official in the company's employ that I have worked with in actual service that hasn't stole knuckles from other cars to hide and cover up and I won't make that statement.

Q. Suppose you have a ten-minute delay replacing a broken knuckle, that is possible, isn't it?

A. Yes, sir.

Q. Won't you have to show that on the time return and delay report?

A. That depends. No, you wouldn't have to because that is part of the cover-up. We don't want to go to the office and tell the train master how we broke in two and that involves the engineer and maybe the conductor and brakemen, maybe all of us and that is part of the cover-up. No, [fol. 4885] I wouldn't say that.

Q. Did you have any occasion during the year 1940 when you had to chain your train together after it had broken in two?

A. Yes, sir, I remember one more recently.

Q. During the year 1940, will you tell us about that?

A. I just don't know whether that was in 1940 or 1941, it hasn't been very long ago. I don't remember whether it was before the first of the year or since, but it is the clearest in my mind. It happened at Anapra, New Mexico, and the AC key dropped out of a car possibly 25 cars from the caboose and derailed the train. That is the AC key that holds the draw bar in place.

Q. That is that large rather heavy flat piece of metal like a slab of metal?

A. That is right.

Q. That inserts in the slot in the draw bar and also in the draft yoke?

A. Yes.

The Court: Might that be otherwise designated and known as the coupler yoke key?

A. Well, in that type yoke, your Honor, they don't refer to that as a yoke but that is right at what we mean. This [fol. 4886] is the AC key, I don't know what they term as the AC key because I am not required to familiarize myself with the names of that draft gear or those parts, but it is the key that goes in there that holds the draft gear that holds the draw bar in the car. I recall another—

Mr. Mason (Interrupting): Just a moment could that have been on October 26, 1940, this Anapra incident?

A. Yes, it could have been.

Q. Do you recall the length of the train?

A. I am reasonably sure that it was a 70-car train or under or somewhere thereabouts, I don't know.

Q. That is the only occasion which you had to use the chain during 1940, is that correct?

A. No.

Q. That chaining took place at Anapra, did it?

A. Yes, sir, west of the west switch at Anapra.

Q. Were you able to use the engine to transport the chain to the place of use?

A. We used the car that was next to this—no, I will correct that, we pulled the head end of the train down and came back to the bad order car through the sidetrack.

The Court: Mr. Fail, would you be permitted to use the chain midway of the train if it broke if you had occasion to [fol. 4887] use it or would you take that car out and put it at the rear of your caboose like was testified here this morning?

A. That would depend on what the emergency was. If I was crowded for time ahead of passenger trains and I could make a good enough tie, I would take the train on to the next sidetrack.

The Court: In other words, if the chain is strong enough that it would stand the pull of the train?

A. Yes, sir, it will do that but that would depend on conditions as to how many trains I was sewing up or, in other

words, delaying as to just how I would try to handle that. I would try to expedite the movement of the train but the chain is strong enough to handle the entire train if you can make a good tight tie together.

Mr. Mason:

Q. You had no casualty or personal injury reportable to the Interstate Commerce Commission occurring on any of these cases where you had a broken knuckle, had you excepting casualties possibly to trespassers?

A. I have made out different accident reports I think for different employees who were braking on the crew for me but I just don't have the recollection of the individual [fol. 4888] cases or what could — been. If you would allow me to refresh my memory from your reports, I expect I could tell you some good stories about what has happened because I have been in a lot of stuff but I can't remember offhand, I don't have anything to refresh it.

Mr. Mason: I will refrain from offering the obvious comment at this point.

Q. Do you contend or assert that you are unable to make a standing inspection of a train of more than 70 cars, an adequate standing inspection of a train of more than 70 cars?

A. At certain places it cannot be done.

Q. A standing inspection?

A. That is right, it cannot be done.

[fol. 4889] Q. Now, it is your assertion that the failure or inability to make an adequate standing inspection of a freight train would result in defects going undiscovered?

A. Well, I wouldn't say that. As I understand you to mean that the air brake would be set again after I had pulled the train by or allowed the train to pull by me, the air would be set by the engineer in order to slow the train slow enough for myself or members of the crew to get on the caboose.

Q. Mr. Fail, I guess you misunderstood. I am talking about standing inspections and not rolling inspections. There is an inspection, is there not, Mr. Fail, covered by the rules, where the conductor and the brakemen walk alongside of the standing train to inspect for defects in the draft gear, running gear, and running appliances?

A. There are certain side tracks where we can only inspect one side of the train at a time.

Q. Answer my question, please; whether such standing inspections are required by the rules?

A. From one side of the train.

Q. Now, is it your position and contention that you cannot make this inspection while the train is standing, adequately, upon trains of more than 70 cars?

A. Well, the inspection can be made, understand, but under the conditions that we have—

Q. Those conditions that exist with trains of 70 cars, aren't they?

A. The point I would like to bring out to you—

Mr. Mason: Will you answer my question?

The Witness: Between the switches—

Mr. Mason: Just a moment. May I have the question read?

The Witness: It would be hard to inspect your train.

Mr. Mason: May that be stricken?

The Court: It may be stricken.

Mr. Mason: Read the question, please.

(The following question was read by the reporter: "Now, is it your position and contention that you cannot make this inspection while the train is standing, adequately, upon trains of more than 70 cars?")

A. Upon trains of more than 70 cars, the rear thirty stick out beyond the side-track, while between the switches it is a good place to walk, but where the rear thirty is sticking out beyond the switch, it is not a good place to walk. You can inspect seventy cars, but with more than [fol. 4891] seventy cars, they are hard to inspect, due to the shoulder on the track, the absence of the shoulder along the track, or rough ground or fill.

The Court: Well, that is assuming that you are stopped at a siding that won't accommodate your train?

A. That is true, but he didn't specify, your Honor, where the stop was going to be made, and that was the point I was trying to bring out, that with more than seventy cars, yes, it would be hard to inspect them.

Mr. Mason: Don't you have a station at which there is a siding with more than a hundred cars capacity, ap-

proximately every twenty-one miles between El Paso and Lordsburg?

A. I would have to figure that up.

Q. There are seven of them, including Deming, aren't there?

A. Yes, sir, seven.

Q. 148 miles.

A. Yes, sir.

Q. Are you in pretty good health, Mr. Fail?

A. Not too good in the last three or four years.

Q. Do you ascribe your ill health to the fear of slack action?

[fol. 4892] A. A lot of it. At times—— Now, let me explain that, please, and I will try to make a comparison so that you will get the feeling. When you drive an automobile five or six hundred miles a day and at the end of the run you step out and just kind of relax, that is the way you feel on a trip where you have been continually on the alert, and I think when you are driving an automobile, if you are not on the alert you should be on the alert, and when you are riding behind 100 cars you don't know where you are going, you don't know what the engineer is going to encounter, you don't know anything about it, only that the first thing you can think of is to get hold of something to protect yourself.

Q. You haven't missed any trips in 1940 on account of ill health, have you?

A. Yes, sir, yes ma'am.

Q. 308 trips.

A. In 1940?

Q. That is an average of 25 trips a months, isn't it, Mr. Fail?

A. I don't know; I can't take your record for it.

Mr. Strouss: He hasn't testified yet that he made any such trips. There is nothing in the record to show that.
[fol. 4893] The Court: That is true.

Mr. Mason: Mr. Fail, do you agree or disagree with my suggestion that you made 308 trips during the year 1940, 297 of them as a conductor in freight service?

A. I don't know if that is accurate, I haven't seen the report, I haven't checked it and I am not testifying to anything I don't know to be true.

Q. Mr. Fail, if you have averaged approximately 25 trips per month as a conductor in freight service—and I assure you that we will prove it from your own time returns and delay reports—would you say or would you not say that that is a pretty fair average of work for a freight conductor?

Mr. Strouss: I object to that as immaterial.

The Court: Well, I will overrule the objection on that ground.

A. I will refer you—you say I didn't lose any time in 1940?

Mr. Mason: No, the question I asked you was whether you would say that 25 trips a month on an average was a pretty fair average month?

Mr. Polley: Isn't that assuming something not in evidence?

[fol. 4894] The Court: On that ground I will sustain the objection.

Mr. Mason: Mr. Fail, is there a monthly mileage limitation applicable to your services as conductor?

A. It is in one respect, but not enforced in any respect.

Q. What is the monthly mileage limitation?

A. 3800 miles, and it couldn't be applied now the way business is, with the number of men they have, if they made it 4400 miles it couldn't be applied, because the business is greater than the number of men to move the business.

Q. But your agreement, your conductor's agreement under which you work contains a limitation of a freight conductor's mileage to 3800 miles, or its equivalent?

A. It is, but I cannot see any relevancy of the conductor's agreement mixed up with the Train Limit law of Arizona.

Mr. Mason: I will ask that all that statement about the relevancy be stricken as volunteered.

The Court: Yes, that may be stricken.

Mr. Mason: Now, Mr. Fail, I think you said that it was reasons of health that impelled you to go to El Paso when [fol. 4895] you made your change from the Coast division?

A. Yes, pertaining to my wife's health.

Q. Now, if your health is affected by fear of slack action on long trains, you have it in your power by the exercise of seniority to go to short train districts, haven't you?

A. That is right.

Mr. Mason: That is all.

Mr. Polley: That is all.

The Court: You are excused, Mr. Fail.

(Witness excused.)

Mr. Strouss: At the close of Mr. Ash's testimony, I had this count made. Mr. Sines has checked it. Now, I find that he made, the report shows, a total of 142 trains, with 22 of those trains over 70 cars.

Mr. Booth: That was Mr. Ash.

Mr. Strouss: That was Mr. Ash.

EDWARD B. SHAW was called as a witness in rebuttal and, being first duly sworn, testified as follows:

Direct examination.

By Mr. Polley:

Q. Will you state your name, please?

[fol. 4896] A. Edward B. Shaw.

Q. And address?

A. Yuma, Arizona.

Q. And whom do you work for?

A. The Southern Pacific Company.

Q. And in what capacity?

A. Conductor at the present time, freight conductor.

Q. Will you state briefly your railroading experience?

A. I have had about 38 years as brakeman, switchman, and conductor, and with something over 24 years of it with the Southern Pacific.

Q. And what other railroads?

A. Chicago and Northwestern from 1903 until approximately 1915, and then with the Southern Pacific from 1916, with the exception of two years in the army during the war up to the present time.

Q. Have you a regular run as conductor now?

A. Yes, sir.

Q. And how long have you had it?

A. Well, this particular run you mean?

Q. Yes.

A. This particular run that I have now, I have only [fol. 4897] had somewhere about five or six months I think.

I have been assigned, an assigned regular conductor for most of the past fourteen years.

The Court: And where is your assigned run now?

A. Between Yuma and Gila.

Mr. Polley: Over what other territory of the Southern Pacific have you worked?

A. Well, practically all of it between Yuma and El Paso.

Q. Have you worked from Yuma to Tucson?

A. Very little. Very little from Gila to Tucson, but a good deal from Yuma to Gila.

Q. Have you worked from Tucson to Lordsburg?

A. Very little; I would say only about four months altogether.

Q. But you have made the run?

A. Yes.

Q. And you are familiar with the territory?

A. Yes, sir.

Q. And from Lordsburg to El Paso?

A. Yes, I worked there on that end for approximately ten years just after the War.

Q. Have you ever worked from Tucson to Douglas?

A. No, not from Tucson to Douglas, that is one district I haven't covered.

Q. And not from Douglas to El Paso?

[fol. 4898] A. Yes; from El Paso to Hachita, and from Hachita to Douglas.

Q. And most of that has been in freight service?

A. Yes, sir.

Q. Have you had any passenger experience at all?

A. Well, I have had, I don't suppose, over three or four passenger runs since I have been in service, I mean extra-passenger trains.

Q. Are you familiar with the rules of the company relative to the duties of brakemen and conductors?

A. Yes, sir.

Q. And are you required to take an examination upon them?

A. Yes, sir.

Q. And from a practical standpoint, are you familiar with the duties of brakeman and conductors?

A. I believe so, yes, sir.

Q. Were you in the courtroom yesterday when Mr. Fail testified and described the duties of a freight brakeman?

A. Yes, sir, most of the time; I believe I was in when he was describing all of that.

[fol. 4899] Q. When he recounted his experiences as to just exactly what a brakeman has to do?

A. Yes, sir.

Q. Have you had similar experiences?

A. Yes, sir, very similar.

Q. Would you state whether or not his description was true, fair and correct?

A. I think so. It possibly didn't cover quite all.

Q. Have you anything you would like to add? I will ask you, do you know of any duties that he didn't mention?

A. Well, of course, there are many things that come up which necessitates our action. I might give, as an example, that one time I saw a boxcar burning up on a siding, I pulled the air on the train and put out the fire. That was my duty to do that, things of that kind it would be hard to include in the regular duties. Nevertheless, they are duties of the train crew.

Q. Have you ever rebrassed a journal?

A. Many times.

Q. Did you hear Mr. Fail testify as to the method of rebrassing a journal?

A. Yes, sir.

Q. The difficulties encountered?

[fol. 4900] A. Yes, sir.

Q. And the hazards encountered?

A. Yes, sir.

Q. Have you had the same experience?

A. Yes, sir.

Q. Would you state that his description was true and correct?

A. I would.

Q. What causes or brings about the necessity for rebrassing journals?

A. Well, the principal reason for rebrassing a journal is to get a worn-out journal out of there and get a new one in, one that has become hot and burned off the babbitt.

Q. Are hot boxes common causes of damaged journals?

A. Yes, sir they get hot and sometimes cut the journal, sometimes overheat the journal until it breaks off.

Q. A hotbox is something that develops instantly, or does it develop gradually?

A. They develop more or less gradually, owing somewhat to the load and to the speed and to the condition, of course, of the brass.

Q. Well, is it possible to detect a hotbox before it results [fol. 4901] in a damaged journal; is it possible for a trainman to detect it, I should say.

A. Under certain conditions, it is very possible; under other conditions it is not so possible.

[fol. 4902] Q. I will ask you this, what effect does the number of cars in the train have upon the ability of the trainmen to detect hotboxes?

A. It lessens the opportunity to vision the car, the hotbox itself. Of course it puts you further away, if you are in the caboose and the hotbox is in the middle of the train it puts you further away from it and a train is always throwing up more or less dust, naturally there would be more with more cars than a short train. In other words, with a short train say of 50 cars you can at most times see all of your train and the danger of accidents through hotboxes is not nearly so great as it would be with twice that number when you couldn't see all of your train or possibly not more than half of it.

Q. Have you ever had occasion to chain two cars together in a train as the result of a broken knuckle or damaged draft gear or some other cause of a break-in-two?

A. Yes, sir.

Q. Did you hear Mr. Fail describe the procedure of chaining cars together?

A. I don't believe I heard that. Yesterday?

Q. Yes.

A. No, I didn't hear that.

[fol. 4903] Q. In the case of a broken knuckle, is it always possible to replace that knuckle on the road?

A. No, not always. It depends on whether you have that type of knuckle or whether you have an emergency knuckle that would fit in that car or whether the draw bar itself is damaged to where you might not be able to use the knuckle.

Q. In that case what do you do?

A. Chain them up. Usually we try to switch them next to the caboose or behind the caboose, depending on which end is out. If an eye is broken out of a knuckle, you must

then chain them up, take them ahead of the caboose or chain them up behind the caboose.

Q. Have you had trouble with the sticking of triple valves?

A. Very common trouble, yes, sir.

Q. Do you still have that trouble?

A. Yes, sir.

Q. What is the effect of a sticking triple valve?

A. Well, it depends on how much the brake is sticking.

Q. First, what does it do?

A. It heats the wheels in the first place and perhaps [fol. 4904] slides the wheels.

Q. Is that caused by the application of the brakes?

A. It is caused partly by the application and partly by not properly releasing the brakes.

Q. And that results in what?

A. In overheating wheels or possibly a broken flange or possibly a broken wheel; possibly flat wheel.

Q. What is the danger in a broken wheel?

A. Usually it results in derailment or wreck.

Q. What is the usual result of a flat wheel?

A. It depends on how flat it is. If it is much over two and a half inches I would say it becomes dangerous to the rail itself. It may break the rail, especially in cold weather or it may break the wheel.

Q. Are you familiar with the inspection of trains by the crew?

A. Yes, sir.

Q. A standing inspection and a running inspection?

A. Yes, sir.

Q. In your opinion does the length of the train have any effect upon the inspection of the train by the crew?

[fol. 4905] A. Well, of course it takes much longer to inspect a long train than it does a short train. It is more difficult to inspect a long train than it is a short train and in some cases it is not nearly as practicable to inspect a long train. I say that because if you are in a short siding and part of your train was out on the main line and you had to saw by another train at least two members of the crew, well, particularly three of them are flagging. One of the crew is flagging at the fouling point, one is flagging ahead and one is flagging to the rear so you haven't any one left but the conductor to inspect the train and it is his

duty to see that the brakemen are in proper position so that he is really not available.

Q. It is possible to make an inspection on a 100-car train as fast as on a 70-car train or in the same length of time?

A. No, you can't even walk 100 cars as quick as you can 70.

Q. While the train is moving, do the trainmen have any duties relative to watching and observing the train?

A. Yes, sir.

Q. What are those duties?

A. The head brakeman watches out from the gangway [fol. 4906] of the engine, watches both sides of the train at short periods, he takes a look. The swing brakeman and the rear brakeman in our state of Arizona both watch, one on each side of the cupola in the caboose, watch the train. The conductor, my experience has been many times steps out on the rear platform to look at the track from the rear to see if anything might be dragging and leave marks on the ties or he looks out the side windows there to see that everything is all right.

Q. What defects do you look for especially?

A. Principally at night for fire. If a brake beam is down, it usually throws fire; if a hotbox is hot, it blazes. If brakes are sticking, they throw fire. In the daytime brake beams down would throw dust, a cloud of dust; you could see smoke from a box and possibly fire.

Q. What effect does the length or the number of cars in a train have upon your ability to detect those various things?

A. With a short train, I say a short train, an average train of 50 cars you can see from the cupola in the daytime on an ordinary clear day every car in the train. I would say you could see every car in the train to the engine.

[fol. 4907] Q. Is that possible on a 100-car train?

A. No, sir.

Q. Do you you know what slack action is?

A. I know what it is, I don't know whether I could give a very good definition of it but it is the run-in and run-out of a train caused by one part slowing up and the other part catching up to it or vice versa.

Q. In your experience have you observed slack action in a train?

A. Yes, sir.

Q. Have you been on trains?

A. Yes, sir.

Q. Is slack action more severe in some territory than in others?

A. Yes, sir.

Q. Nor instance, in what territory is it more severe, or what type of territory?

A. You might say what we call hogbacks create slack action in running. You mean, I suppose, in ordinary running over the road? You are not speaking of stops?

Q. Ordinary running, yes.

A. Going over hogbacks or sharp hills or uneven track would cause run-ins and run-outs and very active slack action.

[fol. 4908] Q. Is slack action usually prevalent on level territory?

A. No, sir, I wouldn't say so except in stopping or starting.

Q. You have testified I believe that you have operated over the territory between El Paso and Lordsburg?

A. Yes, sir.

Q. What type of territory is that?

A. I would say that is more or less rolling and level. I don't think there are very many what we term hogbacks in that territory although there may be one or two places where the slack action is quite severe.

Q. Is it necessary for the engineer to apply the automatic air between El Paso and Lordsburg?

A. Well, when I worked out of El Paso with the long trains you mean with long trains?

Q. Yes.

A. When I worked out of El Paso with the long trains we used to ask the engineers not to use the automatic air under any conditions.

Q. Why was that?

Mr. Mason: I would like to have the record clear. By the automatic you mean the train brakes?

A. The train brakes as distinguished from the engine [fol. 4909] brakes.

Mr. Mason: That is all.

The Witness: We agreed that if he needed to use the automatic air at that time that rather than have him use

it we would prefer to set some of the hand brakes and help him hold it with the engine brakes to save ourselves injury or perhaps save chaining up of the cars.

Mr. Polley:

Q. Have you also operated over the territory between Lordsburg and Tucson?

A. Yes, sir.

Q. What type of territory is that with reference to the possibility of slack action?

A. There are more heavy grades in that territory and of course much more braking power is needed to cover that territory. In other words, they have to use the automatic brakes there. You cannot run a train, in other words, a long or short train over that territory without using automatic air.

Q. Does that increase the possibility of slack action?

A. Yes, every time the automatic air is used I would say that the slack action increases, the danger of damage is increased.

Q. Between Yuma and Gila what type of territory is [fol. 4910] that?

A. Between Dome and Wellton we have about three places there where we get a run-in and run-out of slack action, quite severe at a place called Liguria, both ways. Then we get quite an active slack action about a mile east of Smurr and one other place in between those we get quite a slack action, at or near Stoval and one or two other spots to a lesser degree.

Q. Back when you first began as a brakeman or conductor with the Southern Pacific was slack action experienced then?

A. Yes, sir.

Q. Since that time have you noticed any improvement in the equipment used by the company?

A. What kind of equipment?

Q. Rolling equipment.

A. Yes, I think there has been quite a noticeable improvement in equipment since that time.

Q. Can you state whether or not slack action has been decreased by the use of this improved equipment?

A. From my experience I would say that it was unchanged.

Q. It is just as bad now as it was then?

A. Yes, sir, I can't see any difference in it or that it [fol. 4911] has been overcome in any way.

Q. How do you as a trainman protect yourself against slack action?

A. We just tie ourselves down, get hold of something and lay down. I usually, if I have any indication of it, I get on the cushion and hold on.

Q. Between Dome and Wellton if you anticipate slack action just explain to the court what you do?

A. That is a regular procedure through there, we know those spots and know they are there and take steps to protect ourselves. In other words, I can't do any work between those points successfully so I usually just sit down on the cushion and hang on until we get over those points. That is in the regular running movement of the train at those points. Sometimes they are more severe than others, pending of course on the train and the length of the train and perhaps on where the loads are placed in the train and somewhat on the engineer.

Q. Have you in your railroading ever experienced a reportable injury as the result of slack action, let us confine it to the Southern Pacific?

A. I don't just recollect offhand of having myself any reportable accident. I never distinguished a reportable [fol. 4912] accident from any other accident until this hearing and I never had given it any thought but I don't just remember any reportable accident I have had that was directly owing to slack action of a long train. I can't recall it. However, I may have had, I couldn't say that I have or I haven't.

Q. Have you ever experienced bruises or been shaken up as a result of slack action?

A. Yes, many times.

Q. Is that something to be on the watch for continually?

A. Yes, sir, naturally.

Q. Have you ever seen other members of the crew shaken up or bruised?

A. Yes, sir, it is an everyday occurrence for me in the performance of my duties to call the attention of the members of my crew to sit down and watch themselves, especially if we hear the air go on.

Q. Would you have to be injured fairly seriously before you would lay off more than three days?

A. Yes, sir.

Q. Have you ever seen objects in the caboose dislocated?

A. Many times, yes, sir. Many times I have had the stove turn over, torn loose and turned over and the water [fol. 4913] cans turned over and had the caboose knocked off center, I have had those things happen many times since I have been railroading.

Q. Take the stove, is that fastened to the caboose in some manner?

A. It is fastened to the floor with bolts, possibly half-inch bolts or quarter-inch bolts.

Q. Would you say it requires quite a shock to dislocate that stove?

A. Yes, it takes quite a shock, yes, sir.

Q. Does the expectancy of slack action worry you in any way? Does it affect your nervous system in any way?

A. Well, naturally it does. I might say that I don't think it worries me as much now as it did when I was in Texas and I don't think it worries me as much as it does these fellows in California. I have seen them come into register—

Mr. Mason: (Interrupting) I object to that as hearsay and an opinion and conclusion of the witness as to other unnamed individuals. That is obviously incompetent.

Mr. Polley: He has stated he saw them come in.

The Court: He may describe what he has personally seen but not attempt to testify as to what any of these trainmen [fol. 4914] have told him, that would be hearsay.

Mr. Mason: Or as to how they felt.

The Court: Yes, you may state what you personally observed.

A. I was going to state, your Honor, that I have seen conductors come into the Yuma yard from California when I would be registering out and they would be so nervous they couldn't register and would ask somebody to register them in. I have seen that occur several times when they came in with cars chained up behind the caboose and had been having serious difficulty with slack action in the train. I have seen that occur several times.

Mr. Polley:

Q. Has the length of the train or the number of cars in the train any relation to slack action?

A. Yes, of course. The more cars naturally the more slack action there will be in the train.

The Court: We will take our mid-afternoon recess at this time.

(Thereupon a short recess was taken after which proceedings were resumed as follows:)

[fol. 4915] The Witness, EDWARD B. SHAW, was recalled to the stand, and proceedings were resumed as follows:

The Court: You may proceed.

Mr. Polley: No further questions.

Cross-examination.

By Mr. Mason:

Q. Mr. Shaw, you have been putting in most of your time the last ten years out of Yuma, haven't you?

A. Yes, sir.

Q. Running between Yuma and Gila and between Yuma and Phoenix?

A. That is correct.

Q. Do you make your home at Yuma?

A. Yes, sir.

Q. Now, during the year 1940 you put in a pretty full year, didn't you?

A. Last year, yes, sir; I think with the exception of perhaps, oh, I would say, roughly, forty days off, something like that.

Q. You gave yourself a little vacation in July and August, didn't you?

A. Yes, sir.

Q. After the heavy work of the month of June had [fol. 4916] passed by?

A. Well, I was a delegate to the National Democratic Convention, I went to that in Chicago.

Q. But after you came back, you were on pretty full time during the latter part of the year, weren't you?

A. Yes, sir.

Q. The memorandum I have indicates that you made 254 trips altogether, of which 236 were in freight service

and 18 were dead-head trips. Is that about in agreement with your recollection?

A. I couldn't say, but I wouldn't disagree with that, I would say that it very likely is correct.

Q. By the way, what is your seniority date as a conductor on the Tucson-Rio Grande seniority district?

A. 1924, but I just forget the month.

Q. That is as conductor?

A. Yes, sir.

Q. Of course, you continue to hold your seniority as brakeman from 1915?

A. Yes, from 1917 on this division.

Q. 1917 on this division?

A. Yes, sir.

Q. And that seniority from 1924 enables you to hold a [fol. 4917] regular run as a conductor in pool freight service?

A. Yes, sir.

Q. How long is it since you worked out the east end seniority district out of El Paso?

A. I think I left there the last time in 1928.

Q. Then, you really haven't made any runs in long-train territory since 1928?

A. No, sir.

Q. And your statements as to what happens or may happen, to long trains, is, in so far as it is based on actual experience, based on experience prior to 1928 then, isn't it?

A. Yes, sir.

Q. By the way, you recall, do you not, that during April of 1940, you handled one train consisting of more than seventy cars?

A. Yes, sir.

Q. That was the regular freight out of Phoenix to Yuma on April 20th, wasn't it? Do you recall?

A. I can't recall the date exactly.

Q. That is approximately correct?

A. It was near that time.

Q. And you had, do you recall, eighty-seven cars in that train; is that in accordance with your recollection?

[fol. 4918] A. I just can't recall that. I think there were two or three times that I had more than seventy.

Q. Two or three times?

A. I think so, yes, sir.

Q. Two or three different occasions?

A. I think so, yes, sir.

Q. Well, you do recall a train of approximately 87 cars on April 20th?

A. Yes, I believe I recall that train.

Q. And do you recall that your trip was without any particular incident at all?

A. I don't recollect anything unusual on the trip.

Q. Do you recall whether, during the year 1940, you had occasion to rebrass a car?

A. I know that we did rebrass cars in 1940, but I don't recollect the instances.

Q. Do you recall more than one such instance?

A. I think I could state positively that there was more than one.

Q. Your time returns and delay reports would indicate all the instances where you had to rebrass a car?

A. Not necessarily, no, sir. We might brass a car in a siding when we were waiting for a train, and make no [fol. 4919] report of it on the time slip, on the delay report.

Q. If you were in a siding to rebrass a car, you would be able to use the engine to transport the materials to the point if it was very far from the engine or the caboose, could you not?

A. Well, that would depend upon where the other train was. In other words, we couldn't get out on the main line on the other fellow's time.

Q. You always use the engine when you can, of course?

A. Well, when it is convenient and we can do so. It saves delay, of course, saves a lot of hard lifting and carrying.

Q. Now, you have never had in your experience, Mr. Shaw, a casualty to yourself or to any member of your crew involving more than three days' disability occurring in connection with a burned-off journal, have you?

A. I have never had a burned-off journal.

Q. Did I understand you to say that when the train is running along, it is ordinarily possible to observe all of the cars of a fifty-car train from the caboose?

A. In clear weather, yes, sir.

Q. Well, the weather between Yuma and Gila, and between [fol. 4920] Gila and Phoenix particularly, is almost always clear?

A. Yes, sir.

Q. Isn't Yuma the place where they boast there is never a day without sunshine?

A. Yes, they give free meals over there when the sun doesn't shine.

Q. As a matter of fact, you can observe practically all of the cars with a seventy-car train from the caboose in the good weather that you have between Yuma and Gila, can't you?

A. Well, not as you can fifty. I would say that you can't observe seventy from one end of the train, from either the caboose or the engine, to feel safe with that many. Of course, with an observer on each end of the train, you can take care of it pretty well.

Q. You do have an observer on each end of the train, don't you?

A. Yes, sir.

Q. It is the duty of the head brakeman to ride the engine or the first car of the train for the purpose of observing the train?

A. Yes, sir.

Q. As well as for his other duties?

A. Yes, sir.

[fol. 4921] Q. Did you, during 1940, have occasion to use the chain in order to fasten your train together after a break-in-two?

A. I believe so; but I can't recall the times. I have a very poor memory for dates.

Q. By the way, you have had occasion to lift that chain and carry it, haven't you?

A. Yes, sir, many times.

Q. That is the chain that is 16 feet long, isn't it?

A. Well, I don't know exactly how long it is, but I know that two men can walk four or five feet apart and it will hang over both of their shoulders. I would say the average chain we used to have is around ten to twelve feet, possibly longer.

Q. And do you know how much it weighs?

A. Oh, I know that it weighs an awful lot when you carry it forty or fifty car lengths. I can't say what it weighs actually, no, sir.

Q. It weighs a lot if the sun is overhead.

A. Yes, sir, and if the ground is rough where you are walking.

Q. Would you be surprised if it weighed about 130 pounds?

A. Yes, sir, I would be surprised that it didn't weigh [fol. 4922] more than that. I have no idea what they weigh.

Q. Now, I think you indicated in your testimony that a sticking triple valve is sometimes encountered?

A. Yes, sir.

Q. You discovered that by observation at the standing or running inspections, do you?

A. Standing inspections, we notice by observation.

Q. You can see the brake that has failed to release from the wheel, can't you?

A. Yes, you can see that, or you can see the triple itself if it is on the side you are on.

Q. If you are running, will a sticking triple valve show up by causing the grease to heat and the wheel to smoke?

A. Yes, if there is any grease on the wheel.

Q. There usually is, isn't there?

A. Not necessarily. Lots of times, on new wheels there wouldn't be any grease on them, we have many new wheels.

Q. By the way, the new wheels you are getting on practically all cars are the new type of single plate wheel instead of the old type double plate, aren't they?

[fol. 4923] A. Yes, sir.

Q. And that leads to a uniform expansion and the avoidance of cracking and breakage under heating, doesn't it?

A. I don't know about that, I haven't heard of that feature.

Q. Have you ever had a reportable casualty to yourself or to any member of your crew causing more than three days' disability, and which resulted from an overheated or broken wheel, and the derailment which would result from that?

A. I couldn't say positively, but I have no recollection of it. As I said a while ago, I have never heard what is called a reportable accident explained until today, that a reportable accident is one which caused a man to lose three days' time or more.

Q. I think the rules of the Interstate Commerce Commission, which are in evidence, say that it is more than three days in the ten days next following the accident, and that is the type of casualty to which I refer in my question. Have you ever had a derailment due to a flat

wheel, resulting in a reportable casualty of the kind I have described?

A. It seems to me that I have, but I just can't recollect [fol. 4924] when it was. Usually, when we have wheels flat, if they are over two-and-a-half or three inches flat, we set them out regardless of the contents of the car.

Q. This inspection which you spoke of taking place at stops, that is the standing inspection, and the rolling inspection as well, are for the primary purpose of detecting any defects in the freight-car equipment which would be likely to lead to derailment or a break-in-two; aren't they?

A. Yes, sir.

Q. And I take it, then, that an incomplete or inadequate inspection might lead to a failure to detect some of these defects?

A. That is true, yes, sir.

Q. Do I understand you to say, that with a longer train it is more difficult to make an adequate inspection than if the train consists of less than seventy cars?

A. Well, under certain conditions it would be more difficult, yes, sir.

Q. Well, standing inspections, of course, are made at stations usually, aren't they?

A. We make them wherever we stop, wherever we have an opportunity to make the inspection.

[fol. 4925] Q. And your stops for inspection are normally at stations?

A. Well, I wouldn't say that. We seldom make what we might term normal inspections. In other words, take on our end down there, we go from Yuma to Wellton, take water, we make an inspection while we are taking water; we may meet a train between there and Mohawk, we make another inspection meeting that train; we may then go to Aztec and take water again and make another inspection; go to Sentinel, and take water and make another inspection. Our regular inspection, that is the maximum point, is Kim, to make inspection.

Q. You never reach that because you take water before you get there?

A. We don't need to stop there because we have made inspections before we get there.

The Court: Those inspections that you speak of that you make at these designated points, are those standing inspections or rolling inspections?

A. They are both, your Honor; we walk up the sides of the train, both sides of the train, then when the train pulls out we make the rolling inspection as it pulls out, so that we have both standing and rolling inspection.

Mr. Mason: These inspections, then, are made in all of [fol. 4926] the cases you mention, on eastbound trains at station stops?

A. Well, no, not necessarily—well, you say, “Station stops”; at siding stops?

Q. Yes.

A. Yes, sir, those particular inspections are, yes, sir.

Q. I think that you said that one of the difficulties of inspecting a long train was that there wasn't sufficient room to walk alongside of the train because part of it would hang out over the end of the siding and on to the main line.

A. I don't think I made that statement.

The Court: That was the previous witness, Mr. Mason.
Mr. Mason: Very well.

Q. Then you don't undertake to say that there is any difficulty in making an inspection of a hundred-car train as compared to a seventy-car train?

A. Yes, sir, I made the statement that with a hundred-car train and entering to meet a train, a seventy-car siding, for instance, that the head brakeman would have to flag that train you are meeting, the rear brakeman would have to flag behind the caboose which is still on the main line, [fol. 4927] the swing brakeman would have to make the short flag at the fellow point, and nobody would be left to make the inspection.

The Court: You are not confronted with that situation in your territory; are you?

A. Yes, very much so.

Q. You mean in Arizona?

A. Yes, sir.

Q. Where you have a hundred-car train?

A. No, we have 70 cars, but our cars are so much longer than they used to be, that when we get 70 cars now we cannot get them in the 70-car sidings.

Mr. Mason: There are some cases where your 70-car trains will hang out over these sidings?

A. Yes, most all of them do.

Q. There is no difficulty in the situation you have described of inspecting a long train which would not be entirely obviated by having the sidings extended?

A. If the sidings would hold the train, then the crews could walk up and inspect the train, they wouldn't have the other duties to perform.

Q. If long-train operation were undertaken, it would be necessary, would it not, to have long sidings in any event to permit trains to meet and pass?

A. I would think so, yes, sir.

[fol. 4928] Q. Your experience with slack action at least since 1928, Mr. Shaw, is confined to trains of 70 cars or less, isn't it?

A. Yes, sir, and minor bruises.

Q. You have never in all of your service experienced personally a casualty due to slack action which caused you to lose more than three days?

A. In all my experience?

Q. Yourself I am taking about.

A. I would say I don't recall it on the Southern Pacific.

Q. That is what I mean.

A. No, sir, I don't recall it on the Southern Pacific.

Q. That includes all of your active service since 1915?

A. Since 1916.

Q. You have not, at least since 1920, Mr. Shaw, been a member of a crew or a conductor on a train in which a member of the crew suffered a reportable injury on account of slack action, have you?

A. Yes, sir, I think I have but I cannot recall. I feel sure that I have but I can't recall the times or the cases.

Q. Referring to casualties which you have suffered when [fol. 4929] you were working in the long train territory east of Lordsburg, do you recall a disability which you suffered at Separ in 1924?

A. No, sir, I don't recall it.

Q. Perhaps I can refresh your recollection. Do you recall having been struck by a rock thrown by a trespasser when you were a brakeman?

A. Yes, sir.

Q. You lost three days?

A. Yes, sir.

Q. The train consisted of 61 cars?

Mr. Polley: We object to that, what difference does it make in the length of the train if he was hit by a rock.

Mr. Mason: It goes to show there are other casualties than slack action casualties which these men may suffer.

The Court: Objection overruled.

Mr. Strouss: I think the witness should testify as to what the length of the train is and not counsel for the defendant, however.

The Court: He is on cross-examination. If the witness disagrees with him, he may indicate it.

Mr. Strouss: If he doesn't know or remember this record certainly that is not material evidence.

[fol. 4930] The Court: Well, you made your objection and the Court has ruled on it.

Mr. Mason:

Q. Do you recall the length of that train?

A. No, sir.

Q. Do you recall whether or not it was more or less than 70 cars?

A. No, sir, I do not.

Q. Do you recall an accident when you were a brakeman on the train at Palo Verde in which you suffered "seven days' disability, the accident occurring in 1932?

A. No, sir, I don't recall that.

Q. Do you recall an accident happening on March 7, 1937, at Montezuma when you were conductor of the train?

A. Yes, sir.

Q. Do you recall whether or not the train consisted of 57 cars?

A. No, sir, I don't. I got that finger split.

Q. The accident occurred while the train was standing, didn't it?

A. Yes, sir, unloading freight.

Q. You don't recall this accident at Palo Verde in which according to the memorandum before me you were a brakeman getting off moving car and slipped and fell on the [fol. 4931] ground?

A. No, sir, I don't recall that.

Q. There is a hazard of accidents to brakemen or to conductors getting off or getting on a moving car or train, is there not?

A. Naturally, yes, sir.

Q. You have seen that accident happen to members of your crew from time to time?

A. Yes, sir, I had one man killed that way.

Q. A member of your crew?

A. Yes, sir.

Q. When was that?

A. That was on the east end, in the '20's, Frank Carmichael, a member of the crew. I was a brakeman on the crew.

Q. Was this when the man was getting off the train to get a switch or running after the train after he had closed the switch?

A. No, sir, he was making a drop of some cars to the train.

Q. It was a switching accident while the balance of the train was standing?

A. Yes, sir.

Q. This getting on or off a moving car or train happens practically every time you head into a siding to make a meet, doesn't it?

[fol. 4932] A. They get off and on?

Q. Yes.

A. Yes, sir.

Q. Usually the train is in motion while the man gets off to get the switch ahead of the engine and after the train runs by the man runs to the train to get on after leaving the siding?

A. Yes, sir.

The Court: Do I understand in those operations the engineer must not proceed at a speed in excess of eight miles an hour?

A. Yes, sir, I believe that is the rule—no, I don't believe that is the rule either.

The Court: That is the rule for the rolling inspection?

A. Yes, sir, for the rolling inspection.

The Court: What we want to know is, are you as a conductor or brakeman required to catch that caboose at a speed in excess of eight miles an hour?

A. No, sir, we are not required to.

The Court: You customarily catch it at a speed in excess of that?

A. Quite often, yes, sir. We get the switch lined up as quickly as possible and take after the caboose. It may

[fol. 4933] be going faster than that and it may be going slower. It depends a lot on the grade and the ability possibly of the engineer to hold the train.

The Court: If you consider it is going at a speed that would be unsafe to attempt to board the car, I presume you could just stay on the ground and let the man in the caboose give the signal or throw the air on the engineer?

A. Yes, sir.

The Court: Does that occasionally happen?

A. Yes, sir, it occasionally happens we have to stop them and wait for the rear man to get on and once in a while we pull the air when he thinks everything is all right and goes ahead.

The Court: In the beginning of your examination you made reference to some three or four points on your run from Yuma to Gila where I believe you stated there always occurred this undesirable slack action, is that true?

A. Yes, sir.

The Court: You also spoke of the fact that some engineers were more skillful than others in the controlling of this slack. I believe you made that statement or indicated it at least?

A. Yes, sir, I believe I did indicate it to some extent. I [fol. 4934] think there is some difference in the way some handle it over others.

The Court: In the territory in which you are now operating, can even the most skillful engineer control that slack so that you do not have undesirable slack action?

A. No, sir, I don't think they can. There is very little difference in any of them.

Mr. Mason:

Q. You have never suffered any personal injuries as the result of this supposed failure to control slack at any of these points?

A. Not at these points because I know where they are and I take care of myself, that is ordinary running. They come down in the hole and the slack runs in and they come over the hump and the slack stretches out.

The Court: Being familiar with that territory you know where to expect that action?

A. Yes, sir, if I am where I can observe where I am I know where to expect it. If I am busy with my work it sometimes catches me when I don't realize we are there.

The Court: Supposing this train didn't have, we will say, to exceed 50 cars, would there still be this run-in and run-out at these points?

A. Not to any extent I don't think. Not to the extent [fol. 4935] there would be with 70 cars and I know not to the extent that there would be over that or under 100.

Mr. Mason:

Q. You do agree that the 70-car limitation has not prevented and does not prevent slack action at these points?

A. It hasn't prevented it altogether, no sir; it has helped it a lot.

Q. It has not prevented it at all, has it?

A. It has prevented such a run-in as we would have with more cars, of course.

Q. I think you said in answer to questions by opposing counsel that there have been substantial improvements in the rolling equipment since you first took employment?

A. Yes, sir.

Q. That includes, I take it, improvements in the air brakes?

A. Well, I would say some improvement, yes, sir, some improvement in the triples. I think they have put in heavier springs that we don't have perhaps quite the trouble we used to have in getting brakes released.

Q. There has been an improvement in the draft gear and draft rigging?

A. Yes, sir, they are heavier. There are improved to [fol. 4936] the extent they are heavier and not so apt to pull out as they used to be.

Q. There has been an improvement by reason of the elimination of the archbar truck, hasn't there?

A. Yes, I think so.

Q. You don't have derailments due to archbar failures?

A. Not so much as we used to have. We still have them once in a while but not so much as we used to have.

Mr. Mason: That is all, thank you.

Redirect examination.

By Mr. Polley:

Q. Mr. Shaw, along with the increase in the weight of the draft gears, has the weight of the cars increased in the same proportion?

A. Yes, sir.

Mr. Mason: I object to that on the ground that the witness is not qualified. He doesn't know what proportion the increase in the weight of the draft gears has been.

The Court: I will sustain the objection until you qualify him.

Mr. Polley:

Q. Have the cars become larger?

A. Yes, sir, much larger.

Q. And heavier?

[fol. 4937] A. Yes, sir, heavier.

Q. Did I understand you to say that prior to the improvement in equipment that the draft gears did pull out?

A. Yes, sir.

Q. And that has been eliminated to a certain extent?

A. I think, possibly, to a certain extent. I wouldn't say how much, but possibly to some extent.

Q. In other words, the draft gears are able to withstand the shock now?

A. Yes, sir, they are built much heavier and are able to withstand the shock I think better than they used to.

Mr. Polley: That is all.

(Witness excused.)

The Court: It is so near the closing hour I don't presume it would be advisable to start with another witness.

Mr. Strouss: I might take the time to put in some exhibits I have here that do not require putting a witness on the stand. With exhibit No. 152, the green book, it was my understanding with counsel that we would indicate the parts of that we wanted to use in evidence and as far as the plaintiff is concerned we have gotten those up.

[fol. 4938] The Court: That is the Santa Fe rules?

Mr. Strouss: That is the Santa Fe rules and we have also with the Southern Pacific air brake rules so it will eliminate the necessity of the whole book being used.

(Discussion off the record.)

The Court: I think this should be marked for identification.

The Clerk: Plaintiff's exhibit No. 327 for identification.

Mr. Strouss: I will offer that in evidence. I am putting this in with the understanding we had when Mr. Mahoney was the witness.

The Court: Is there any objection to it, Mr. Mason?

Mr. Mason: There is no objection.

The Court: It may be admitted in evidence as plaintiff's exhibit No. 327.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 327.")

Mr. Booth: We have the right to introduce such additional parts as we desire.

Mr. Strouss: Yes, that is understood. Now we offer an exhibit of six sheets entitled, "Southern Pacific Company, Pacific Lines, Air Brake Rules and Regulations." [fol. 4939] That is exhibit No. 319 in evidence.

Mr. Mason: The entire book is in evidence already, isn't it?

Mr. Strouss: Yes, the entire book is in evidence.

Mr. Mason: You are simply calling attention to excerpts?

Mr. Strouss: Yes, to reduce the record.

Mr. Mason: We have no objection to it.

The Court: It may be admitted in evidence.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 328.")

Mr. Polley: The Court will remember when defendant's witness Mr. Browning was on the stand that certain volumes entitled "Proceedings of the American Railway Association, Division V; Mechanical" were marked for identification and since that time we have agreed, or counsel has agreed, we might take certain excerpts from those volumes and have a representative of the defendant check the correctness of those excerpts and then introduce the mimeographed copies in evidence. Mr. Sines and I have agreed that the copies which I now desire to offer are correct. Is that correct?

Mr. Sines: That is correct.

[fol. 4940] Mr. Mason: I want to state right here that these may not be introduced in evidence as we have serious objection to them and I am prepared to argue those objections but not prepared to argue them tonight. As far as the correctness of these excerpts are concerned as being correctly transcribed from the volumes marked for identification the statement of counsel is correct, but there has been no agreement and I want that to appear emphatically in the record that they may be introduced.

Mr. Strouss: I don't think Mr. Polley meant that you had agreed or waived objection to the introduction of them as far as the legal objection is concerned.

Mr. Polley: Did I understand you are not prepared to argue it tonight?

Mr. Mason: Yes, it is quite a lengthy argument and I have a number of citations on each.

The Court: They may be marked for identification.

Mr. Booth: Those books were only turned over as foundational material.

Mr. Polley: This is an excerpt from the volume entitled "Proceedings of the American Railway Association, Division V, Mechanical, 1929," and contains 32 sheets.

The Clerk: Plaintiff's exhibit No. 329 for identification.

Mr. Polley: We next ask that a document be marked for identification entitled "Excerpt from Volume Entitled 'Proceedings of the American Railway Association, Division V, Mechanical, 1930,' " containing 12 sheets.

The Court: It may be marked for identification.

The Clerk: Plaintiff's exhibit No. 330 for identification.

Mr. Polley: We now desire to have marked for identification a document entitled "Excerpt from Volume Entitled 'Proceedings of the American Railway Association, Division V, Mechanical, 1931,' " containing 4 sheets.

The Court: It may be marked.

The Clerk: Plaintiff's exhibit No. 331 for identification.

Mr. Polley: The next document entitled "Excerpt from Volume Entitled 'Proceedings of the American Railway Association, Division V, Mechanical, 1932,' " containing 2 sheets and we ask that that be marked for identification.

The Court: It may be marked.

The Clerk: Plaintiff's exhibit No. 332 for identification [fol. 4942] tion.

Mr. Polley: I now ask to have marked for identification a document entitled "Excerpt from Volume Entitled 'Proceedings of the Association of American Railway, Mechanical Division, 1938 and 1939,' " containing 5 sheets.

The Court: It may be marked.

The Clerk: Plaintiff's exhibit No. 333 for identification.

Mr. Strouss: Now we offer in evidence plaintiff's exhibit for identification No. 206 which has on the title page, "American Railway Association, Division V, Mechanical, Power Brakes and Appliances for Operating Power Brake Systems, An Abstract of the Report of Results of Tests Conducted by the American Railway Association to Determine What If Any Improvements or Changes in the Present Standard of Brake Equipment for Freight Trains Are Necessary or Desirable."

The Court: Where did this come from?

Mr. Strouss: This is the volume which was identified by the witness Browning as the report made by Mr. Johnson, Director of Safety of the Mechanical Division of the Association of American Railway, following tests in conjunction with the Interstate Commerce Commission to [fol. 4943] determine the efficiency of air brakes.

The Court: This has already been marked for identification?

Mr. Strouss: Yes.

The Court: You are now offering the entire book in evidence?

Mr. Strouss: I am offering the entire book in evidence in order to avoid any question of excerpts being offered. I have excerpts of the parts which we are interested in but in order to avoid the objection that the whole book is not offered I am offering the whole book at the present time.

Mr. Mason: I have an objection to the book as I say and I am prepared to argue that but I haven't my memorandum of argument here.

The Court: Does this complete your offer?

Mr. Strouss: Of this type of evidence, yes.

The Court: The court will be at recess until 10 A. M., tomorrow morning.

(Thereupon the court stood at recess until 10 A. M., April 17, 1941.)

[fol. 4944]

10 A. M., April 17, 1941

All parties being present as heretofore noted, proceedings were resumed as follows:

The Court: You may proceed.

W. A. Kidd was called as a witness in behalf of the plaintiff and being first duly sworn testified as follows:

Direct examination.

By Mr. Polley:

Q. Will you state your name, please?

A. W. A. Kidd.

Q. Your address?

A. 1222 East Chandler Boulevard, El Paso, Texas.

Q. Are you employed by the Southern Pacific?

A. I am.

Q. How long have you been so employed?

A. Since May 1, 1924.

Q. In what capacity?

A. Switchman, brakeman, and conductor.

Q. Will you briefly state your experience in railroading?

A. It has been approximately thirty-five years of service on various railroads throughout the United States and Mexico.

[fol. 4945] Q. In what class of service?

A. Train service, switchman, brakeman, and conductor.

Q. Have you operated on both freight and passenger trains?

A. Yes, sir.

Q. What territory do you work on now?

A. El Paso to Tucson via Douglas, Bisbee Junction over the south line.

Q. Are you familiar with what is described as slack action?

A. Yes, sir.

Q. Were you in the courtroom and heard Mr. Fail testify?

A. Yes, sir.

Q. Do you agree with his definition of slack action?

A. I do.

Q. In your railroading experience have you ever experienced injuries as the result of slack action?

A. I have.

Q. Will you describe that, please?

A. My first injury that I recall as the result of slack action I believe was in 1925, if I am not mistaken, April 26, 1925.

[fol. 4946] Q. Where was that?

A. At the crossing of the old south line and the Nogales branch just south of town here.

Q. Which way was the train proceeding?

A. To the old south line yard.

Q. Explain to the court what happened?

A. It was a rule of the company before this double track was put in effect that on our arrival off of the south line at this junction point and crossing that the head end would call up over the phone, call the yardmaster at Tucson yard and find out where they wanted our train. The head man did call up, got the information that they wanted the train in the south line yard which made it necessary for us to cross over the Nogales branch line. They had a gate there over this line and the head brakeman threw this gate around and gave the engineer the proceed signal, he had stopped, that is, our engineer, he had stopped probably thirty car lengths prior to reaching this crossing. He proceeded toward this crossing and another brakeman coming in off the Nogales branch appeared and threw the gate around in front of him.

Q. Threw it shut?

A. Yes, sir, and he applied the air and went into emergency.

[fol. 4947] Q. That is the engineer on your train?

A. Yes, sir, he applied the air and went into emergency, the train making about six to eight miles an hour.

Q. Was there a run-in of slack?

A. There certainly was, a terrific one.

Q. Were you in the caboose?

A. I was.

Q. Who else was in the caboose?

A. G. B. Pray, the conductor, and G. R. Lester, another brakeman.

Q. What was the effect of that run-in of slack?

A. It knocked the draw bars down in two P. F. E. cars just directly ahead of the caboose and practically demolished the caboose.

Q. Did any injuries result?

A. It knocked the front trucks of the rear car clear back against the rear trucks of the same car.

Q. What happened to the men in the caboose?

A. We were all pretty badly bruised and shook up; nothing very serious.

Q. Was it what is termed a reportable accident?

A. I think it should have been if nothing more than on account of the damage done to equipment.

Q. Were any of the other men given medical treatment?

[fol. 4948] A. We were all taken to the clinic by yardmaster Shudder in his car or somebody's car on our arrival at the yard office, and bruises and wounds dressed, painted up, but what extent the injuries were I don't recall.

Q. Have you experienced any other injury as the result of slack action?

A. I have.

Q. Where was that?

A. Entering the Lordsburg yard.

Q. When?

A. April 10, 1940, at 2:05 A. M.

Q. On the first accident that you testified to, do you recall how many cars were in that train?

A. 70.

Q. Will you go ahead with the second accident now, just how did that occur?

A. On our arrival at Lordsburg with this train, I was braking behind, on the rear end. They headed into the yard at east switch, headed up to the No. 1 track. Those tracks hold approximately 80 or 85 cars, that is, the No. 1 track. Just prior to the time that the caboose would enter the yard, I had gotten down out of the cupola and gone to the back platform preparatory to lining up the main [fol. 4949] line switch and derail. Just as I got out on the platform and stepped down on the lower step of the caboose to see where we were and how close we were to the switch, this slack came and threw me violently against the back end corner of the caboose and it shook me up

and hurt me so bad that I don't even recall falling, but when I did come to I was out eight or ten feet down the bank and couldn't get up.

Q. Did you receive medical treatment as the result of that?

A. I did, I went to the hospital after arrival in El Paso the following day. The doctor in Lordsburg gave me medical treatment that night and the next day returned me to El Paso on train No. 6, on the following day. That night I went home, I didn't think I was injured really as bad as I was and at 1 A. M. or approximately one o'clock my wife called the doctor and he came and sent me to the hospital.

Q. How many cars were in that train?

A. 100.

Q. How long were you disabled?

A. If my memory serves me right, it was 34 or 35 days.

[fol. 4950] Q. Do you recall any other reportable accidents that resulted in injury to you as a result of slack action?

A. No, I don't believe I do, not to my memory.

Q. Have you seen objects in the caboose dislocated?

A. Yes, sir.

Q. As a result of slack action?

A. This last incident where I was injured, practically everything inside the caboose was torn loose, the stove was demolished, and some of it broken up in pieces no bigger than your two hands.

Q. Of what material is that stove composed?

A. Cast iron, bolted to the floor with two long rods that run through the flange of the top of the stove and also through the flange at the bottom of the stove, one on either side, and bolted to the floor of the caboose. Water cans were knocked down, they are also bolted up in the corner of the caboose with bands of, well, I might say, sheet steel.

Mr. Polley: That is all.

Mr. Mason: No questions.

Mr. Strouss: May Mr. Kidd now be excused?

The Court: I take it that he may now be excused.

[fol. 4951] (Witness excused.)

J. S. HARDWICKE was called as a witness in rebuttal and, being first duly sworn, testified as follows:

Direct examination.

By Mr. Strouss:

Q. State your name please, Mr. Hardwicke.

A. J. S. Hardwicke.

Q. Where do you reside?

A. 1030 East McKinley, Phoenix, Arizona.

Q. What is your business?

A. I am a railroad employee, conductor and trainman, brakeman.

Q. During the past five or six years, you have been employed some by the State?

A. I was employed from about January first, 1935, until some time in 1939, by the state of Arizona in the State labor department as labor inspector for the Industrial Commission.

The Court: 1935 to what year?

A. To 1939. However, during that time I was on leave of absence or furlough from the railroad company.

[Ex. 4952] Mr. Strouss: May this document entitled, "Highway Grade Crossing Accidents Where Auto Involved," be marked for identification?

The Court: It may be marked.

The Clerk: Plaintiff's Exhibit No. 334 for identification.

Mr. Strouss: Mr. Hardwicke, I hand you plaintiff's Exhibit 334 for identification, and ask you if that document was prepared by you?

A. Yes, sir, it was.

Q. What was the source of the information contained in the document?

A. The I. C. C. accident bulletins, Table No. 24, for the years 1929 to 1939, inclusive.

Mr. Booth: Did he say this was prepared by him?

Mr. Strouss: By you or under your supervision, Mr. Hardwicke?

A. This was prepared by me myself.

Mr. Booth: You did the work yourself?

A. Yes, sir.

Q. What experience have you had in compiling accident statistics?

A. This is an exhibit that is compiled from the figures taken from Table 24 of the I. C. C. bulletins.

[fol. 4953] Q. What experience have you personally had in compiling accident statistics?

A. I have had this experience, that I can read and write and take figures and add them together, and that is about the experience I have had. I took it right from the writing that is contained in the report and the figures contained in the report.

Q. Are you familiar with the rules of the Interstate Commerce Commission requiring the report of accidents?

A. To some extent, yes.

Mr. Strouss: Now, we object to that. There hasn't been anything to show yet what the nature of this work was that was done.

The Court: I think it is a little premature.

Mr. Booth: I think it is probably.

Mr. Strouss: Now, the matter shown on this exhibit, is it merely a copying of figures which appear in Table 24?

A. That is correct.

Q. The figures which would here appear under the column "Accidents" appears under that column in the Table, does it, Mr. Hardwicke?

A. Yes, sir.

Q. And the casualties appear?

[fol. 4954] A. That is the same.

Q. And autos registered?

A. That is a figure taken from the I. C. C. bulletin, report.

Q. Just a copying of the figure that appears there?

A. That is right.

Q. That is true as to each—

A. —each of the three states, including New Mexico and Nevada.

Q. Now, at the bottom of the document appears some figures. Are those figures which were calculated by yourself?

A. Yes, sir.

Q. And is that a calculation that is made from the figures appearing above?

A. That is correct.

Q. Arithmetical calculation?

A. That is correct.

Q. You have compared this against the Table from which it was taken?

A. I have.

Q. And are the figures which appear on the exhibit a correct re-statement of the figures as they appear in the Table in the bulletin?

A. Yes, they are.

[fol. 4955] Q. And the computation at the bottom, do you believe that to be correct?

A. I believe that to be correct.

Mr. Strouss: We offer the exhibit 334 for identification in evidence.

Mr. Mason: Mr. Hardwicke, did you just add up the number of automobiles registered year after year to get your totals at the foot of the sheet?

A. No, sir, I took the number of registered automobiles for each year and added them together and arrived at the figures at the bottom.

Q. This figure, for example, for the State of Nevada, 379,329, is the aggregation of all those different years, isn't it?

A. Yes, sir.

Q. You got your rate by dividing 379,329 by 70, did you?

A. We took the figures this way, the total number of automobiles registered by the year, and divided by 10,000; and the figure arrived at, we took the total number of accidents and then divided it by that figure and arrived at the figure set out at the bottom.

Q. Does the Interstate Commerce Commission accident bulletin contain any over-all figure for a succession of years [fol. 4956] such as you show here on this exhibit?

A. No, they don't, they show it for each year.

Q. What is your authority for aggregating the total number of automobiles registered year after year to get a rate for an eleven-year period like this?

A. The exhibit would be what it purports to show for the ten-year period rather than by the year.

Q. Now, this is in addition to the same automobiles year after year, isn't it?

A. Well, it is the total number of automobiles that was registered by the year, then to a total for ten years.

Q. Let us take the year 1938, for example. Did you own an automobile in 1938, Mr. Hardwicke?

A. Yes, sir.

Q. Did you own the same one in 1939?

A. Yes, sir.

Q. That automobile appears in here twice, doesn't it, two automobiles?

A. Well, under this kind of computation, it could be considered.

Q. And that is true that the same automobiles appear here twice or three or four times, perhaps, in your computations?

[fol. 4957] A. Mine would.

Q. Yours would, and as far as you know, a great many others would.

A. That may be so.

Q. And you don't know how many, of course?

A. No.

Mr. Mason: No objection.

The Court: It may be admitted.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 334.")

The Court: The exhibit which has now been tendered to the Court may be marked "Plaintiff's Exhibit 335 for identification."

The Clerk: Plaintiff's Exhibit 335 for identification.

Mr. Strouss: Mr. Hardwicke, I hand you plaintiff's Exhibit 335 for identification, a document entitled, "Highway Grade Crossing Accidents, Table 24, Interstate Commerce Commission Accident Bulletin." Now, was this exhibit prepared in a similar manner?

A. Exactly the same manner.

Q. And the source of information is the same?

A. I received this information in the same way.

Q. The matters set forth under the column "Accidents," [fol. 4958] is merely a tabulation of the figures which appeared in the bulletin?

A. That is correct.

Q. And the same is true of the figures appearing under "Casualties"?

A. That is correct.

Q. And under "Autos Registered?"

A. Yes, sir.

Q. And the figures appearing at the bottom are the additions of those columns?

A. That is right.

Q. And the item appearing at the bottom is the same arithmetical computation?

A. The same method was used.

Mr. Strouss: May we offer Exhibit 335?

The Court: What is the difference between these two exhibits, Mr. Hardwicke?

A. Well, one is Highway Grade Crossing Accidents where automobiles, casualties to automobiles were involved, and the other where all automobiles, accidents whether a casualty occurred or not.

Mr. Strouss: Doesn't Exhibit 334 include only accidents where an automobile was involved?

A. Yes, and this one included all highway grade crossing accidents.

The Court: In other words, if they hit a team and wagon [fol. 4959] or pedestrian, it would be included on 335, whereas, on 334, it is limited to accidents wherein an automobile was involved?

A. That is right.

Mr. Mason: I take it, you have related, at the foot of the sheet of Exhibit 335, accidents involving other vehicles than automobiles, and involving pedestrians against the number of automobiles registered?

A. Well, that is correct.

The Court: Now, Mr. Hardwicke, may I inquire also if all of the accidents and casualties shown on Exhibit 334 are also included in 335?

A. That is right, and these others added.

[fol. 4960] Mr. Mason: In presenting this exhibit, Mr. Hardwicke, do you take the position that the number of automobiles registered has some relation to accidents to horse-drawn vehicles or to pedestrians?

A. Only to highway grade crossing accidents, that is what the exhibit applies to.

Q. Yes, this applies to all classes of highway grade crossing accidents including, for example, in the state of Arizona 13 accidents and 13 casualties in which automobiles were not involved?

A. That is correct.

Q. Although you relate those accidents and casualties to your registration of automobiles, don't you?

A. That is what the exhibit purports to show.

The Court: May I ask this question, does the Interstate Commerce Commission table 24 from which these figures were taken, as I understand, relate, these accidents and casualties, to the number of automobiles registered in the state that particular year?

A. Yes, sir, it does. There are two separate computations made into a report for each, one includes all highway grade crossing accidents, the first exhibit No. 334 as I stated before.

[Vol. 4961] Mr. Mason: Does the Interstate Commerce Commission Accident Bulletin contain a rate each year of accidents and casualties per ten thousand automobiles registered?

A. For each year, yes, sir.

Q. For all accidents and casualties as well as those involving only automobiles?

A. Yes, sir.

Mr. Strouss: We will put that table in so there will be no question about it to show just what does appear here. I will get a bulletin and offer it in evidence and we can eliminate any question.

The Court: The exhibit has been offered.

Mr. Mason: No objection.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 335.")

Mr. Strouss: It is being put in for the purpose of showing what the bulletins actually show.

The Court: The exhibit now being handed to the clerk may be marked No. 336 for identification.

Mr. Strouss:

Q. Mr. Hardwicke, I hand you plaintiff's exhibit No. 336 for identification, a document entitled, "Grade Cross-

ing Accidents Classified as to Trains Striking Autos and [fol. 4962] Autos Running into Trains. I.C.C. Accident Bulletin, Table 50, Years 1935 to 1939 Inclusive." Was this prepared by you or under your supervision?

A. Yes, sir, it was.

Q. It is merely a tabulation of figures which appear in table 50 of the Interstate Commerce Commission Accident Bulletins for the year indicated?

A. Yes, sir.

Q. Are the accidents classified in that table under "struck by train" and "ran into side of train"?

A. Yes, sir.

The Court: Do I understand that these figures shown on exhibit No. 336 cover the entire United States?

A. That is correct.

Mr. Strouss:

Q. It includes both train accidents and train service accidents?

A. Yes.

Q. To that extent you have added the two figures shown together on the table?

A. That is right.

Q. So this is not exactly a tabulation but is a tabulation of the two figures shown on the table?

A. That is right.

Q. Is this a correct statement of those figures as they [fol. 4963] appear in the table?

A. It is.

Mr. Strouss: We offer this exhibit in evidence.

Mr. Mason: No objection.

The Court: It may be admitted.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 336.")

The Court: The exhibit now being handed to the clerk by counsel may be marked for identification as exhibit No. 337.

Mr. Strouss: Mr. Hardwicke, I hand you plaintiff's exhibit No. 337 for identification, entitled, "Casualties to Non-Trespassers, Table 51, Interstate Commerce Commis-

sion Accident Bulletins." Was this document prepared by you or under your supervision?

A. It was.

Q. The figures which appear under the columns, "killed, injured, total casualties," are they tabulations of figures which appear in the Accident Bulletins?

A. They are.

Q. That is true for both the states of Arizona and Nevada?

A. Yes, sir.

[fol. 4964] The Court: This includes all casualties in both states covering all railroads in both states?

A. That is right.

The Court: It is not limited to the Southern Pacific?

A. No.

Mr. Strouss:

Q. At the bottom appears a statement regarding an accident on the Santa Fe. What is the source of that information?

A. That was taken from a form T accident report rendered by the Santa Fe Railroad to the Interstate Commerce Commission.

Q. And the statement concerning an accident on the Southern Pacific at Harney, Nevada, where was that taken from?

A. That was taken from a form T accident report rendered by the Southern Pacific Railroad in Nevada to the Interstate Commerce Commission.

Mr. Strouss: We offer this exhibit in evidence.

Mr. Mason: I would like to ask a little about it. Mr. Hardwicke, does this include under the heading "Killed" all persons who were killed in all classes of accidents in the two states?

A. Well, no, not all types of accidents, but train service and some nontrain.

Q. It includes train accidents?

[fol. 4965] A. Yes.

Q. And train service accidents?

A. Yes.

Q. And nontrain accidents?

A. I am not sure about the nontrain.

Q. Other than trespassers?

A. Yes, that is right.

Q. It includes everybody who was killed in connection with railroad operations of which a report was made to the Interstate Commerce Commission?

A. That is right.

Q. It includes train, train service, and nontrain accidents?

A. That is right.

Q. As to injuries, it includes all reportable casualties to all classes of persons?

A. Yes, sir.

Q. In the same classes of accidents?

A. Yes, sir.

Q. That includes passengers?

A. It includes passengers also.

Q. Includes persons on station platforms?

A. Yes, where it was directly reported as a train service accident.

Q. Or a train accident?

[fol: 4966] A. Yes.

Q. It includes signal men and maintainers and track laborers on the right of way who may have been struck and run down?

A. I wouldn't know unless I had the heading of the report as to whether it would include those or not but it was taken from the table 51 figures.

The Court: In preparing this particular exhibit No. 337, did you merely copy the figures shown on this table 51 or did you make some compilation?

A. No, I took the figures contained in table 51.

Mr. Mason: No objection.

The Court: It may be admitted.

(The document referred to was received in evidence and marked "Plaintiff's exhibit No. 337.")

Mr. Strouss: Mr. Hardwicke, I have handed you Accident Bulletin No. 108 of the Interstate Commerce Commission covering the year 1939. Will you refer to table 51 and refreshing your memory state what accidents that exhibit covers?

A. Train and train service accidents.

Q. It does not include nontrain accidents?

A. No, it does not.

The Court: The exhibit now being handed to the clerk [fol. 4967] and counsel may be marked exhibit No. 338 for identification.

The Clerk: Plaintiff's exhibit No. 338 for identification.

Mr. Strouss:

Mr. Hardwicke, I hand you plaintiff's exhibit No. 338 for identification and ask you if that is a document of seven sheets. Was that document prepared by you or under your supervision?

A. It was.

Q. Was it the source of the information set forth?

A. The information is taken from the form T accident reports rendered to the Interstate Commerce Commission in the state of New Mexico for the years 1930 to 1939, inclusive.

Mr. Booth: Rendered by the Southern Pacific Company?

A. Yes, sir.

Mr. Strouss:

Q. Accidents occurring in the state of New Mexico?

A. Yes, sir.

Q. The information which is set forth here, is that merely a restatement of the information as it appears in the form T reports?

A. As it is taken from the reports.

[fol. 4968] The Court: Do I understand these are the reports to the New Mexico Corporation Commission or to the Interstate Commerce Commission?

A. To the Interstate Commerce Commission.

Mr. Strouss:

Q. The dates are as shown on the form T reports?

A. That is right.

Q. And the location?

A. That is the same.

Q. Train number and number of cars in train?

A. That is correct.

Q. Speed and miles per hour?

A. Yes.

Q. That is as appears on the form T's?

A. That is right.

Q. Days disabled?

A. The letter P appearing in that column represents the probable loss of injury at the time of accident and the letter A which is used in the exhibit would show the actual loss of time.

Q. That is the way it appears on the form T's?

A. That is exactly correct.

The Court: I take it from this exhibit this only covers the casualties to employees of the Southern Pacific Company in the state of New Mexico?

A. That is right.

[fol. 4969] Q. And the class of person is here shown as was shown on the form T's?

A. That is correct, either conductor, brakeman, fireman, or engineer. The first letter is used in each of those.

Mr. Strouss:

Q. And the name of the person is as shown on the form T's?

A. The name of the person is the same.

Q. And the Interstate Commerce Commission classification?

A. That is contained in the form T reports.

Q. And the description of accident?

A. That is the cause stated briefly as the cause of the accident.

Q. That is as it is stated on the form T's?

A. That is correct.

Mr. Booth: May I ask a question. At the bottom of sheet 7 you have a star and the words "slack action" and then you have a number of these accidents starred which evidently refers to that note. Do you mean to say in any of these reports the words "slack action" were used? That is your conclusion, isn't it?

A. Not altogether my conclusion as to slack action. Some of these accidents have a statement which relates to slack action accidents.

[fol. 4970] Q. You say it relates to them. That is your opinion whether it relates to them or not, isn't it? They don't say "slack action"?

A. This is the detailed report. For instance, the first one on page 1 of the exhibit—

Q. I am asking you whether you used your own personal individual judgment in determining whether any of these accidents were slack action accidents and, if so, which they are. You are introducing this as purporting to be a transcript of the form T's. How much of this is form T and how much of this is your judgment?

A. Only just in some cases the question of slack action, all of it came from the form T reports as it was worded with the exception of the slack action which after reading the detailed report on some of them—

Q. (Interrupting) Is this an abstract of the form T's or is this the opinion of Mr. Hardwicke?

Mr. Strauss: I hadn't questioned him on that. He hasn't said anything about that part of the exhibit.

The Court: I will sustain the objection.

Mr. Booth: All right.

Mr. Strauss:

Q. Mr. Hardwicke, the star which appears at the bottom of the page, that would not appear on the form T?

[fol. 4971] A. No.

Q. That is to indicate as the words appear there "slack action accident"?

A. That is correct, to call attention to that particular accident.

Q. That didn't appear on the form T?

A. No, it did not.

Q. Are you familiar with the classification of the Interstate Commerce Commission as to slack action accident?

A. I am to this extent, that I have made quite a study of it for the past ten or twelve years in that respect, examining Interstate Commerce Commission reports of that nature and the Interstate Commerce Commission has a form or symbol which classifies train and train service accidents, nontrain accidents and so forth and so on, but the information as to the classification of this particular exhibit, that has been classified by the railroads themselves

and reported to be S-J or S-D or S-C or whatever the I.C.C. class might be.

Q. In placing the stars, did you give consideration to that S-J classification?

A. I did, under code 7007 which would be sudden stops, lurch or jerk or slack action as it is set up by the Interstate [fol. 4972] Commerce Commission.

The Court: May I ask, I didn't catch that, what does the S-J stand for?

A. That is the Interstate Commerce Commission class that is required in the report. In other words, if you had one type of an accident that is used to show how it should be classified in the proper report.

Mr. Strouss: We offer the exhibit.

Mr. Mason: I would like to inquire—

Mr. Booth: I have a few questions, if you please.

Mr. Strouss: We might save a little time, I will ask that they produce their form T reports for this period and we can save time by putting those form T reports in and they will speak for themselves?

Mr. Booth: You might have asked for them a while ago. It is very convenient for you to put a witness on who is obviously not qualified as a statistician.

The Court: The matter before the court is that this exhibit No. 338 has been offered in evidence. Is there objection to it?

Mr. Mason: I think you said the classification S-J was your guide in putting your little notation on here, was it? [fol. 4973]. A. No, the code number which is used under train service accidents in the book set up by the Interstate Commerce Commission governing—

Mr. Mañon: Will you answer my question, please?

Mr. Strouss: I think he is trying to answer it.

Mr. Mason: I will ask him another question and see if he can answer it. Mr. Hardwicke, did you use the form T reports in preparing this exhibit?

A. Yes, sir, I did.

Q. Where did you get them?

A. I got them from the Interstate Commerce Commission in Washington, photostatic copies.

Q. Is there a code number on those form T reports as rendered by the carrier?

A. No, sir.

Q. I understand you to say that this S-J classification is your guide, that is what you stated in your testimony in answer to question from your counsel here?

A. No; I said that is the Interstate Commerce Commission class furnished the Interstate Commerce Commission by the railroad company in the form T report as the railroad classified it under the rules of reporting accidents.

[fol. 4974] Q. The railroad classifies the accident as the S-J accident, do they?

A. They do.

Q. On the form T report and you took that as your guide in determining whether you would put a star opposite the accident, did you?

A. No, I did not.

Q. What did you take as your guide?

A. The guide would be under the symbol number which is required to be set up in those reports as to the classification of the accident between train and nontrain accidents and sudden stops or starts or lurch or jerk or slack action under a certain number.

Q. Are the words "slack action" mentioned in the rules anywhere as a classification of accident?

A. No, it is not. It says "lurch, sudden stops, emergency stops, undesired emergencies, or lurch or jerk."

Q. You understand what I am trying to get at, don't you?

A. I do.

Q. I want to know how you form your opinion that you would place a star opposite certain of these accidents; how did you do that?

[fol. 4975] A. Merely from the cause briefly stated in the report and the detail contained at the bottom of the form T report.

Q. Of the form T report?

A. Yes.

Q. You resorted to nothing but the form T report and the detail and cause as stated on the face of the form T report?

A. And the information as furnished in the detail.

Q. Then this is your opinion and version of the nature of the accident?

A. As far as the star is concerned, it is?

Q. As far as this exhibit is concerned. Let's look at this exhibit just a moment. You show here on the very first page an accident to a train of 70 cars at Mongola, New Mexico, on February 15, 1930, and the only thing that you show in the description of the accident is broken air pipe. Is there anything there in that description to indicate that slack action was in any way involved?

A. There wasn't in this broken-air pipe notation, which is a separate number in the Interstate Commerce Commission report. I am not so sure, it says, "Cause briefly"—at the top of the form T report. For instance, here is a form T report and up above here is "Cause briefly" and [fol. 4976] down below under item 26 "Detail of cause, nature and circumstances of accident, responsibility and experience of employees responsible." Sometimes you will find two or three pages of that attached to the report but I only took the information on this report and added to it. That says "Cause briefly," that is item 17 on the form T report.

[fol. 4977] Q. There is nothing on the face of your exhibit here to indicate that slack action was involved at all in that case?

A. There must have been in the detail below.

Q. Then this is just your information from the Form T report?

A. That is right, so far as that accident is concerned, from the information I received from the report.

Q. Now, here is an accident at Alamagordo, New Mexico, on June 17, 1936. You put a star opposite the notation under description of accident, "Lost his balance and fell from train."

A. 1936?

Q. Yes, June 17, 1936, at Alamagordo. Have you found it?

A. Yes.

Q. And that is an S.J. classification according to your notation there, isn't it?

A. Yes, sir.

Q. Now, on January 29, 1937, just a few lines down the sheet, you show an accident at Simmons.

Mr. Strouss: What year is this?

Mr. Mason: January 29, 1937, just seven months later, "Lost balance and jumped from running board of engine," [fol. 4978] and you didn't put a star opposite that.

A. Well, the detail in the report must not have been sufficient to class that as a slack action accident.

Q. Then, what you have done here, in placing the star on, is to give us your opinion of the cause of the accident, and particularly whether slack action was involved?

A. That is correct, and taking into consideration the detail at the bottom of the report.

Q. You have over on the last sheet, sheet 7, two more S.J. accidents, one of them at Baughn, on June 7, 1939, a 47-car train, "Lost balance and fell when descending from eupola." You put no star there, did you?

A. No, I didn't put any star there.

Q. And yet the description here is substantially the same as the accident for which you used a star that happened at Alamogordo on a hundred-car train?

A. On the same page?

Q. No, the other one is the one I previously referred you to on Sheet 5.

A. Oh, yes; the reason for not starring this last one mentioned at Baughn, New Mexico, I am quite sure there [fol. 4979] was nothing in the report to indicate that there was slack action at that particular accident.

Q. It is your opinion that Conductor Dolan didn't have slack action involved?

A. I did that from the report.

Q. Here is another one. The last one on the sheet, October 18th, at Tularosa, a sixty-seven car train; there is another, "Lost Balance and fell," which is almost identical with the description of the accident on June 17th to the 100-car train, and yet you didn't put a star there?

A. No doubt there was no indication that slack action caused him to fall.

Mr. Mason: We object to the exhibit on the ground that in so far as the starred notation is concerned, it is obviously the opinion and conclusion of the witness and doesn't purport to refer to any classification appearing upon the face of the underlying documents; the witness hasn't shown any qualification, or necessary qualification, to enable him to express any opinion as to the manner in which

these accidents should be classified, and, particularly, as to whether they should be classified as he has undertaken here to classify them.

Mr. Strouss: I would like to ask Mr. Hardwicke a question. [fol. 4980]

Q. Mr. Hardwicke, when an accident occurs, is any report made by members of the crew?

A. Well, yes.

Q. Is that what is known as Form 2611?

A. 2611 on the Southern Pacific, I believe.

Q. And that report is given, that description is given to the company by the employees involved?

A. The employees involved.

Q. These Form T's are signed by whom?

A. They are signed by the superintendent of the railroad company on the Southern Pacific.

The Court: The objection will be overruled and it may be admitted in evidence. The witness frankly admits that he, and he alone, is responsible for placing the star on the exhibit. It may be received for what it is worth.

Mr. Booth: We would like to be furnished with certified copies of the Form T reports which this witness said he used.

Mr. Strouss: I don't think that is required of me. I was about to say to the Court that I am going to introduce the certified copies of all the form T's, we will have them in the record here.

Mr. Booth: I don't know that it is necessary to put [fol. 4981] them in evidence.

Mr. Strouss: Well, they will be put in evidence. Now, if the Court please, in view of what has developed, and the testimony of the witness as to the reports which are made by employees at the time of the accident, I ask that the defendant be required to furnish us with forms 2611, the employees' reports of these accidents.

The Court: You are referring now to operations in the State of New Mexico?

Mr. Strouss: Operations in the state of New Mexico at this time. As the other exhibits come up, we will ask for those.

Mr. Mason: Of course, if that is a motion to produce, it is subject to certain rules.

The Court: That is true.

Mr. Mason: And I have numerous authorities, which I prepared in anticipation of just such a motion, to the effect that under the rules of practice under which this Court operates, which are the same, of course, as the Federal rules, documents, such as have been demanded, need not be produced. I have many authorities on the subject, some of them squarely in point, applying particularly to reports made by employees in connection with accidents in which [fol. 4982] the party, the employer, is involved.

Mr. Strouss: I would like to see the authority. I don't think there are any authorities which would permit a party to come into court and conceal from the Court evidence which would be pertinent to the matter before the Court, which would be the effect of such a rule.

The Court: Well, the Court has overruled the objection. I have admitted this exhibit in evidence for what it is worth, and your oral demand now to produce is the only matter before the Court.

Mr. Strouss: That is right, that is the only matter. Now, I asked for all. A lot of accidents, of course, I know have nothing to do with slack action. I do not intend to impose any unnecessary or unreasonable request here, but I ask that all forms 2611, those reports with respect to the accidents that are indicated by a star on Exhibit 338, that the defendant be required to produce those reports.

The Court: Only those items that are shown by the stars on Exhibit 338?

Mr. Strouss: That is right.

(Thereupon, the matter was discussed between Court and counsel.)

[fol. 4983] The Court: Well, I might say, Mr. Strouss, I have no intention to sit here and determine in each of these accidents whether it was or was not caused by slack action. We would be here from now on. The Court is inclined to deny your request to produce. I won't rule on it at the moment, but you may proceed with your other exhibits.

Mr. Strouss: I want to put in evidence the Form T's; they are not here as yet.

The Court: All right.

(Further discussion between Court and counsel.)

The Court: The record may show that the plaintiff's demand to produce these Forms, 2611, covering casualties

in the state of New Mexico, is denied. We will take a five-minute recess.

(Thereupon, a short recess was taken, after which the witness was recalled to the stand, and proceedings were resumed as follows:)

The Court: You may proceed.

Mr. Strouss: Now, we offer in evidence plaintiff's exhibit 339, a certified copy of Form T report filed with the Corporation Commission, covering an accident on the Santa Fe.

Mr. Booth: Would you mind identifying that in the record?

Mr. Strouss: Exhibit 339 for identification.

[fol. 4984] The Court: Being an accident report of the Santa Fe occurring on the Albuquerque division on July 27, 1939. Any objection.

Mr. Booth: No objection.

The Court: It may be admitted.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 339.")

Mr. Strouss: We ask that certified copies of Form T's covering the year 1930, accidents on the Southern Pacific lines in New Mexico, be marked for identification.

The Court: It may be marked.

The Clerk: Plaintiff's Exhibit No. 340 for identification.

Mr. Strouss: We offer Exhibit No. 340 for identification in evidence.

Mr. Booth: No objection.

The Court: It may be admitted.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 340.")

Mr. Strouss: We ask that certified, photostatic copies of Form T reports, covering the year 1931, accidents on Southern Pacific Company's lines in New Mexico, be marked for identification.

The Court: It may be marked.

The Clerk: Plaintiff's Exhibit No. 341 for identification. [fol. 4985]

Mr. Strouss: We offer Plaintiff's Exhibit No. 341 in evidence.

Mr. Booth: No objection.

The Court: It may be admitted.

(Thereupon, the document referred to was received in evidence and marked "Plaintiff's Exhibit No. 341.")

Mr. Strouss: We ask that certified, photostatic copies of Southern Pacific Company's lines in New Mexico, Form T reports, filed with the Interstate Commerce Commission for the year 1932 be marked for identification.

The Court: They may be marked.

The Clerk: Plaintiff's Exhibit No. 342 for identification.

Mr. Strouss: We offer Plaintiff's Exhibit No. 342 for identification in evidence.

Mr. Booth: No objection.

The Court: It may be admitted.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 342.")

Mr. Strouss: We ask that certified, photostatic copies of Form T reports, filed with the Interstate Commerce Commission by the Southern Pacific Company for the year 1933, [fol. 4986] covering accidents in the State of New Mexico, be marked for identification.

The Court: They may be marked.

The Clerk: Plaintiff's Exhibit No. 343 for identification.

Mr. Booth: We have no objection.

✓ The Court: There is no objection. It may be admitted.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 343.")

Mr. Strouss: We ask that certified, photostatic copies of Form T reports filed by the Southern Pacific Company with the Interstate Commerce Commission, covering accidents in the state of New Mexico for the year 1934, be marked for identification.

The Court: They may be marked.

The Clerk: Plaintiff's Exhibit No. 344 for identification.

Mr. Strouss: We offer No. 344 for identification in evidence.

The Court: No objection, I presume?

Mr. Booth: No objection.

The Court: It may be admitted.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 344.")

[fol. 4987] Mr. Mason: Those may all be put in in a group, with successive numbers.

Mr. Strouss: The same things covering the years 1935, '36, '37 and '38 and '39.

The Court: Then the record may show that, there being no objection, that the Form T reports for the years 1935 to 1939, inclusive, be admitted in evidence and be given their proper number.

(The documents referred to were received in evidence and marked, respectively, as Plaintiff's Exhibits, Nos. 345 to 349, inclusive.)

Mr. Booth: We would like permission to borrow those from the Clerk for checking.

The Court: The Court will grant you that permission, Mr. Booth.

Mr. Strouss: I hand counsel Plaintiff's Exhibit 350 for identification, "Preliminary Revised Population Estimates for Continental United States" issued by the United States Department of Commerce.

Mr. Booth: No objection.

Mr. Mason: I would appreciate counsel advising us as to the materiality of this.

Mr. Strouss: Well, it is offered in connection with the grade crossing exhibits.

[fol. 4988] Mr. Mason: The foundation for some calculation of grade crossings as to population, or something of that kind.

Mr. Strouss: I want to show the population in New Mexico and Arizona.

The Court: Everything else is in the record, I think that should be. There is no objection, it may be admitted.

(The document referred to was received in evidence and marked "Plaintiff's exhibit 350.")

The Court: The exhibit just handed to the clerk may be marked "Plaintiff's Exhibit 351 for identification."

Mr. Strouss: Mr. Hardwicke, I hand you plaintiff's Exhibit 351 for identification, a document entitled, "Southern Pacific Company, Pacific Lines, Casualties to Employees, Los Angeles Division, Freight Service Train and Enginemen." Was that document prepared by you or under your supervision?

A. Under my supervision.

Q. And the source of the information was the Form T reports?

A. That is correct.

Q. Copies of which are furnished by the Southern Pacific Company?

[fol. 4989] A. Yes, sir.

Q. And the same information is contained in this —

A. As contained in the Form T reports.

Q. As in Exhibit 338?

A. That is correct.

Q. Except that this is the Los Angeles Division, and that was the State of New Mexico?

A. That is correct.

The Court: And all answers that you made to questions propounded to you with reference to Exhibit 338 would apply to this exhibit?

A. Would apply to this exhibit, that is right.

Mr. Strouss: We offer this exhibit in evidence.

Mr. Booth: With this single exception, I think that the note on Sheet 21, S.J. Star, "undesired emergency application of airbrake causing severe slack action on rear of train," is not on Exhibit 338.

The Court: That is true. If you care to examine him on that, you may do so.

Mr. Booth: Is that your conclusion, or do you find that in the rules of the Interstate Commerce Commission?

A. That is my conclusion, that particular accident. That is at Bassett, California?

[fol. 4990] Q. Yes.

A. That is correct.

Q. I see you also have the note, "slack action" on the opposite side of the page with a star.

A. Yes.

Q. The star "slack action" refers to all of the starred accidents except the one at Bassett, California, November 9, 1939, sheet 21, is that correct?

A. That information of the starring of that slack action was by the ICC report, Form T, in which the cause briefly was stated, "Unbalanced by slack action on rear end of the train."

Mr. Booth: That is all.

The Court: Any objection to the exhibit?

Mr. Booth: The same objection as to the other.

Mr. Mason: No objection to the body of the exhibit as founded on Form T reports, but to the witness undertaking to make his conclusion.

The Court: The objection is overruled. It may be admitted in evidence.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit 351.")

Mr. Strouss: Now, I have copies of Form T reports which were furnished to me by counsel for the Southern [fol. 4991] Pacific Company, true copies of the Form T Reports filed by the Southern Pacific Company with the Interstate Commerce Commission for the years 1930 to 1939, inclusive, covering accidents on the Los Angeles division.

Mr. Mason: Do you have those Form T reports bound up by years?

Mr. Strouss: By years, yes.

Mr. Mason: And you wish to introduce them in evidence, commencing with 352?

Mr. Strouss: Yes.

Mr. Mason: We have no objection to their being received in evidence with the successive numbers given them for the successive years, being Nos. 352 to 361 inclusive.

The Court: They may be received in evidence and the proper numbers given to them.

Mr. Mason: In the same way that the Form T reports for accidents occurring in New Mexico were received a few moments ago.

The Clerk: Plaintiff's Exhibits 352 to 361, inclusive, in evidence.

The Court: Covering the years 1930 to 1939. The exhibit now being handed to the Clerk may be marked for identification as Plaintiff's Exhibit 362.

The Clerk: Plaintiff's Exhibit 362 for Identification. [fol. 4992] Q. Mr. Hardwicke, do you have before you a copy of plaintiff's exhibit No. 362 for identification, a document entitled, "Southern Pacific Company, Pacific Lines, Casualties to Passengers and Passenger Employees, Train and Train Service Accidents, State of New Mexico"?

A. Yes, sir.

Q. This document was compiled from the same source as exhibit No. 338?

A. Yes, sir.

Q. The only difference is it is limited to Passengers?

A. Passengers and Passenger employees.

Q. The questions that were asked there would apply here?

A. Yes, sir, no trespassers just casualties to passengers and passenger employees.

Mr. Strouss: We offer this exhibit.

Mr. Booth: No objection.

The Court: It may be admitted.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 362.")

The Court: Just a question on that last exhibit, there are no stars representing any purported slack action shown in this exhibit?

A. No, there are not. It is passenger train operation [fol. 4993] solely; either passengers getting on or off or on board and employees injured.

The Court: The exhibit just handed to the clerk may be marked for identification as plaintiff's exhibit No. 363.

Mr. Strouss:

Q. Do you have before you a copy of plaintiff's exhibit No. 363 for identification entitled, "Southern Pacific Company, Pacific Lines, Los Angeles Division, Injuries to Passengers and Passenger Employees"?

A. Yes, sir.

Q. Covering the years 1930 to 1939?

A. Yes, sir.

Q. A document of 10 sheets?

A. That is right.

Q. This is similar to the exhibit No. 362 except that this is for the Los Angeles division?

A. Los Angeles division.

Q. Where the stars appear, that is the same situation as on exhibit No. 338?

A. Yes, but there are no stars appearing on this exhibit.

The Court: There are no stars on exhibit No. 362 or exhibit No. 363.

Mr. Mason: There is one on No. 363.

The Witness: The same thing would be the answer as [fol. 4994] to the stars.

Mr. Mason: I have a question or two before the exhibit is received.

Mr. Strouss: We offer the exhibit.

Mr. Mason:

Q. Mr. Hardwicke, this purports to be confined to passengers and passenger train employees in passenger train accidents?

A. Any employees working upon passenger trains or passengers riding upon the train.

Q. It purports to be confined to passenger trains.

A. Yes.

Q. I want to call your attention to sheet 3, the first item, March 3, 1932, at Indio, extra 5006 west. That was not a passenger train, was it?

A. No, it was not.

Q. That item should be stricken from the exhibit?

A. It should be stricken from the exhibit.

The Court: Then the top item on sheet 3 of exhibit No. 363 appearing on March 3, 1932, at Indio, California, may be stricken from the exhibit.

Mr. Mason: No objections otherwise to the exhibit, your Honor.

The Witness: I would like to explain this at this time. This item was copied into this report as a result of the [fol. 4995] notation made upon the work sheets which had "Los Angeles division, passenger injuries" on it. It was copied through mistake.

The Court: It may be admitted in evidence.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 363.")

Mr. Strouss: I hand the clerk a document entitled, "Southern Pacific Company, Pacific Lines in New Mexico, Casualties to Train and Engine Service Employees."

The Court: It may be marked for identification.

The Clerk: Plaintiff's exhibit No. 364 for identification.

Mr. Strouss:

Q. Have you before you a copy of plaintiff's exhibit No. 364, Mr. Hardwicke?

A. I have.

Q. This was prepared in similar manner as exhibit No. 338 except that this is limited to the year 1940?

A. It was.

Q. All the questions which were asked there, your answers would be the same here?

A. That is correct.

Mr. Strouss: We offer this in evidence.

Mr. Mason: Subject only to our prior objection as to the witness having classified certain of these accidents as slack [fol. 4996] action accidents we have no objection to the exhibit. Insofar as it purports to be a reproduction of the volume it reports it is not objected to.

The Court: The reserved objection is overruled and it may be admitted in evidence.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 364.")

Mr. Strouss: This exhibit was made from the form T reports which were furnished to us and I returned yesterday and I think we certainly should have those produced. That is the form T for the year 1940 covering the states of New Mexico, Arizona, and Nevada and the Los Angeles division in California, and I am going to put in further exhibits covering those other three states.

The Court: It would seem that those form T reports should be produced. I will hear you on it if you care to be heard.

Mr. Booth: Those are the reports we furnished you, aren't they?

Mr. Strouss: Which I just returned.

Mr. Booth: We will produce them but I prefer to do it after recess, I want to check these exhibits.

Mr. Strouss: I have no objection to that but I will want [fol. 4997] the opportunity to offer them in evidence.

Mr. Booth: It is obviously impossible to cross-examine this witness today.

Mr. Strouss: I have no objection to that. I am not trying to get the form T reports away from you so you won't have them to use.

The Court: They are not here at the present time.

Mr. Strouss: It is agreeable to me that they be put in after the recess.

Mr. Booth: We only have one set and we would like to use them in preparation for the cross-examination of this witness.

The Court: The Court will permit you to withdraw any of these exhibits, particularly those introduced and admitted in evidence today for your examination in order that you might properly cross-examine the witness.

Mr. Mason: I think the situation is a little more complicated than that. In the previous cases as to the Los Angeles division for the ten-year period, we furnished copies, we employed a typist especially, for which Mr. Strouss paid, to make those copies from our retained filed copies. As to the New Mexico form T reports, Mr. Strouss [fol. 4998] obtained certified copies from Washington so we had no agency there, but now the copies of the form T reports from which this last exhibit was prepared are our own retained file copies, we have no spare copies. They are simply the company's own retained file copies and the only copies that there are. If they are to be placed of record, then copies should be prepared by the party who proposes to introduce them rather than rob our files.

Mr. Booth: Not only that but the rules of the Interstate Commerce Commission require us to retain these permanently in our own files, but if you want to take these and have copies made of them or have copies made of them at your expense we will do it.

Mr. Strouss: I am not objecting to that, but it is the way they go about getting it. I will have the copies made but I want to have them made myself.

The Court: Then as to exhibit No. 364, has that been admitted?

The Clerk: Yes.

The Court: Then you may proceed.

Mr. Strouss: It is understood I will have the use of your copies to have them made?

[fol. 4999] Mr. Mason: Certainly.

Mr. Strouss: We ask that document entitled, "Southern Pacific Company, Pacific Lines, Los Angeles Division, Casualties to Train and Engine Service Employees, Year 1940," be marked for identification.

The Court: It may be marked.

The Clerk: Plaintiff's exhibit No. 365 for identification.

Mr. Strouss:

Q. Do you have before you, Mr. Hardwicke, copy of plaintiff's exhibit No. 365 for identification?

A. Yes, sir.

Q. This is similar to exhibit No. 338?

A. That is correct.

Q. It covers what?

A. Train and engine service employees.

Q. If similar questions were asked you, like answers would be given as were given to the others?

A. The same answers.

Mr. Strouss: Do you have any questions, Mr. Mason?

Mr. Mason:

Q. You placed this star opposite the notation of certain of these accidents yourself?

A. Yes, sir.

Q. That is your opinion, is it?

[fol. 5000] A. Yes, sir.

Mr. Mason: Subject to our previously stated objection which was argued in connection with exhibit No. 338, your Honor, we have no other objection.

The Court: The objection is overruled. It may be admitted in evidence.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 365.")

The Court: The exhibit just handed to the clerk may be marked plaintiff's exhibit No. 366 for identification.

The Clerk: Plaintiff's exhibit no 366 for identification.

Mr. Strouss:

Q. Mr. Hardwicke, do you have before you a copy of plaintiff's exhibit No. 366 for identification?

A. Yes, sir.

Q. This was prepared by you or under your supervision.

A. Under my supervision, yes, sir.

Q. This document is entitled, "Southern Pacific Company, Pacific Lines in Arizona, Casualties to Train and Engine Service Employees, 1940"?

A. Yes, sir.

Q. If like questions were asked you which were asked [fol. 5001] concerning exhibit No. 338 would your answers be the same?

A. My answers would be the same.

Mr. Strouss: Any questions, Mr. Mason?

Mr. Mason: The same objection.

The Court: Objection overruled, it may be admitted in evidence.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 366.")

The Court: The exhibit just handed to the clerk may be marked plaintiff's exhibit No. 367 for identification.

The Clerk: Plaintiff's exhibit No. 367 for identification.

Mr. Strouss:

Q. Do you have before you a copy of plaintiff's exhibit No. 367 for identification?

A. Yes, sir.

Q. Entitled "Southern Pacific Company, Pacific Lines, Salt Lake Division, Casualties to Employees in Train and Engine Service, 1940"?

A. That is correct.

Q. This exhibit does in fact include casualties to employees and passengers on passenger trains for the year 1940 for the Salt Lake division, does it not?

[fol. 5002] A. That is right.

Q. It was prepared in like manner as exhibit No. 338?

A. That is right.

Q. If the same questions were asked you concerning that as applied to this exhibit, would your answers be the same?

A. They would be the same.

Mr. Strouss: Any questions?

Mr. Mason: The same objection.

The Court: Objection overruled, it may be admitted in evidence.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 367.")

The Court: The exhibit just handed to the clerk consisting of one sheet may be marked plaintiff's exhibit No. 368 for identification.

The Clerk: Plaintiff's exhibit No. 368 for identification.

Mr. Strouss:

Q. Mr. Hardwicke, do you have before you plaintiff's exhibit No. 368 for identification entitled, "Southern Pacific Company, Pacific Lines in New Mexico, Casualties to Passengers and Passenger Employees, 1940"?

A. I have.

Q. This was prepared by you or under your supervision [fol. 5003] vision?

A. Yes, sir.

Q. If like questions were asked you concerning this exhibit as were asked concerning exhibit No. 338, would your answers be the same?

A. My answers would be the same.

Mr. Strouss: We offer this in evidence.

Mr. Mason: No objection.

The Court: It may be admitted in evidence.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 368.")

The Court: The exhibit just handed the clerk consisting of two sheets may be marked plaintiff's exhibit No. 369 for identification.

The Clerk: Plaintiff's exhibit No. 369 for identification.

Mr. Strouss:

Q. Mr. Hardwicke, do you have before you a copy of plaintiff's exhibit No. 369 for identification.

A. Yes, sir.

Q. Entitled, "Southern Pacific Company, Pacific Lines in Arizona, Casualties to Passengers and Passenger Employees, 1940"?

A. I have.

Q. This was prepared by you or under your supervision? [fol. 5004] A. It was.

Q. If the same questions were asked you as were asked concerning exhibit No. 338, your answers would be the same?

A. Yes, sir.

Mr. Strouss: I offer this in evidence?

Mr. Mason: The same objection, your Honor.

The Court: The same ruling. It may be admitted in evidence.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 369.")

The Court: The exhibit just handed the clerk consisting of one sheet may be marked plaintiff's exhibit No. 370 for identification.

The Clerk: Plaintiff's exhibit No. 370 for identification.

Mr. Strouss:

Q. Mr. Hardwicke, do you have before you a copy of plaintiff's exhibit No. 370 for identification entitled, "Southern Pacific Company, Pacific Lines, Los Angeles Division, 1940, Casualties to Passengers and Passenger Employees"?

A. Yes, sir.

Q. This exhibit was prepared by you or under your supervision?

A. Yes, sir.

Q. If similar questions were asked concerning this exhibit [fol. 5005] as were asked concerning exhibit No. 338, would your answers be the same?

A. Yes, sir.

Mr. Mason: May I ask you why you didn't put a star opposite the last item here?

A. There must not have been enough detail in the report, on the slack action report to be made.

Mr. Mason: There is no objection to this exhibit.

The Court: It may be admitted.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 370.")

Mr. Strouss: I have a statement in bulletin No. 108, Interstate Commerce Commission Accident Bulletin No. 108, calendar year 1939, which I would like to have read into the record rather than put it in by way of an exhibit.

The Court: It is just a short statement, is it?

Mr. Strouss: About a paragraph.

The Court: If you will show it counsel.

Mr. Mason: How much of this do you want to put in?

Mr. Strouss: The first paragraph.

Mr. Mason: Down to the words "reportable accident"? [fol. 5006] Mr. Strouss: Yes.

Mr. Booth: There may be other parts of that bulletin that we desire to read in and I presume you will have no objection?

Mr. Mason: It is an ex parte statement of the Interstate Commerce Commission. It is not statistics compiled from

reports but is simply an explanatory statement made by the Interstate Commerce Commission.

Mr. Strouss: My recollection is that some of those explanatory statements went in on the part of the defendant.

Mr. Mason: We read some of those to Mr. Sullivan and they went in without objection.

The Court: I take it there is no objection?

Mr. Mason: No, there is no objection.

The Court: Will you read it into the record and identify what you are reading.

Mr. Strouss: I am reading—counsel will not require that it be read by the witness?

Mr. Mason: No, and it doesn't need to be read by counsel if the copy may be given to the reporter.

Mr. Strouss: I am reading from page 4, Accident Bulletin No. 108, calendar year 1939, of the Interstate Commerce [fol. 5007] Commission under the heading, "C. Casualties to Employees. Notable progress has been achieved by railway managements in making work less hazardous for their employees. To stimulate effort in this direction, safety contests have been instituted among the various railways and among the operating divisions of individual railways. Casualty rates per million man-hours are closely watched. This has led reporting officers to exercise great care in distinguishing the injuries which are reportable to the Interstate Commerce Commission from those which are not reportable. Thus, the reduction in employee injuries from 26.67 per million man-hours in 1925 to 7.03 in 1939 is in part the result of the prevention of accidents and in part of greater caution in reporting. There is still sufficient difference in the rates of carriers of about the same size to raise a doubt as to whether the difference in the casualty rates reflects the relative safety of the respective railways or is the result of a difference in the standard of reporting due to varying interest among the carriers as to what constitutes a reportable accident."

Mr. Strouss: You may take the witness.

Mr. Mason: I wonder if we couldn't defer the cross-examination of this witness until we resume. If we start [fol. 5008] now, it will only mean that we take two bites at the cherry.

The Court: I think that would be the advisable thing to do.

Mr. Mason: Now, your Honor, it is clearly out of the question I think to argue and obtain a ruling upon the admissibility of certain material which was offered in evidence last night because it will require an analysis of the record and also certain authorities.

The Court: I might say to you that the Court reread the testimony of the witness Browning and has examined, not in detail, but at least hurriedly these exhibits which were marked for identification at yesterday's session. I understand that you prefer to defer your argument on the law matter until next week.

Mr. Mason: I am prepared to indicate the character of our objections but I don't desire in view—

The Court: We still have an hour.

Mr. Mason: You have to be there at one o'clock, your Honor, and have to have sufficient time to get lunch.

The Court: I don't want to rush you on it, but I will say this in fairness to counsel for the State so you will know [fol. 5009] what the Court has in mind. I was somewhat astounded in counsel asking this court to admit a document such as exhibit No. 333, part of which at least contains an address given by some distinguished gentleman, Mr. Patterson, I believe, to a group of workers—

Mr. Strouss (interrupting): A group of which?

The Court: I said "workers," a group—

Mr. Strouss: It was an address given at the annual meeting of the Association of American Railroads.

The Court: I admit that that is true, but I still cannot see how any address given by any gentleman, be he ever so distinguished, would ever be admissible in a court of record.

Mr. Mason: Your Honor, I will indicate so that counsel for the State may know exactly our objections, how we consider these particular exhibits objectionable. There are two classes of exhibits tendered, one is the report of Harley Johnson to the mechanical division of the American Railway Association which was marked for identification as plaintiff's exhibit No. 206, that is this bulky document here. The other consists of these excerpts from certain of the annual reports or bound volumes containing the annual reports of the Proceedings of the Mechanical Division of the American Railway Association commencing with the year 1929 and including the year

1930 and certain other years, but no year prior to 1929. Now, as to the report of Director Harley A. Johnson, that is clearly hearsay. Mr. Johnson is not offered here as a witness to identify this document. It is true that it was identified in the testimony as having been rendered by Mr. Johnson to the American Railway Association but as to this defendant, it is clearly hearsay. There is no showing that the defendant ever employed Mr. Johnson, ever asked him to make an investigation, ever asked him to make a report, ever adopted the report when it was made or ever approved it. There is no showing that the American Railway Association ever adopted the report. There is no showing that the American Railway Association has any authority to bind the defendant although it is a member of the association to any action which it might take in either adopting or approving a report; for all that the record here before us shows the defendant may have objected vigorously to this report and may still be objecting to it. This is the same situation as if the Tucson Chamber of Commerce had appointed a committee which then had [fol. 5011] employed an engineer to investigate and determine whether another underpass should be opened in the city of Tucson. Now the Southern Pacific Company is a member of the Tucson Chamber of Commerce, but it would be ridiculous in the extreme to say that the Southern Pacific Company would be bound by the report of the engineer to this committee. After all the mechanical division is nothing but a division of the Association to which the Southern Pacific belongs. Now as to the other material that is receivable, if at all, only on the theory—

The Court (interrupting): You are speaking now of the tests?

Mr. Mason: I am speaking not of this document which I have finished with for the moment, but I am speaking of these excerpts from the bound copies of the annual reports of the Proceedings of the Mechanical Division. I say that is receivable, if at all, under either one of two theories. In the first place, it may be argued that it was a report made by Mr. Johnson to the division in his capacity as an employee of the division and that the defendant is in some way bound because it is a member of the Association. The argument just made as to the receivability in evidence of exhibit No. 206 for identification, the bulky

report by Mr. Johnson, applies equally to the reports which [fol. 5012] are offered as excerpts from the proceedings of the division, but there may be the other theory that under the theory of documentary or verbal completeness, as it is phrased by Dean Wigmore, where a part of a document has been produced and used in evidence, where it is part of the record, then the balance of the document may be used. Your Honor will recall that that rule is subject first to the qualification that a part of the document must be used before the balance is receivable. The defendant has not or did not in its case use any part or introduce in evidence any part of the reports of the annual proceedings of the division. Our exhibit No. 204, in connection with which these reports were mentioned, consists of excerpts from the annual issues of the book of rules. Those books of rules were offered here for the inspection of the opposition, one of them is marked Exhibit No. 203 for Identification; but there are no excerpts from the reports of the annual proceedings of the mechanical division which appear in exhibit No. 204 except for the year 1915. I think it is, when the book corresponding to exhibit No. 203 for identification was missing, but that does not appear to be [fol. 5013] material here because there is no offer of the balance of the report for the year 1915. I was careful to specify in opening my remarks that only portions of the reports for the year 1929 and following are offered. Those, as I see it, are the excuses or conditions or theories upon which these exhibits might be offered, and those are, of course, the objections that we have. Now, the fact of the agency, the fact that Mr. Johnson is or is not an agent of the defendant cannot be shown by Mr. Johnson's declaration. It must be shown otherwise than by evidence already of record unless Mr. Johnson is here called, and he is not. Jones on Evidence at page 486 says: "The declarations of the alleged agent are not competent to prove the existence of the relation of principal and agent."

The Court: What volume and page is that?

Mr. Mason: I have before me Jones on Evidence, Volume I, page 486, which is the latest edition, I take it, from the county library.

The Court: Go ahead.

Mr. Mason: Again on page 484-85 (reading): "A condition to the introduction of the declarations of one who is

alleged to have been an agent is that the agency must be proved aliunde and not by the declarations themselves." Of course, otherwise we would have the spectacle of lifting one's self by one's bootstraps.

The Court: Let's hear from the State on it.

Mr. Mason: I should have added here a statement from Wigmore, the fourth volume, 1923 edition of Wigmore on evidence as to the rule of verbal completeness where part of a document is offered, pages 508 and following. However, I have not discussed the matter from that standpoint because it is our position that the rule of verbal completeness cannot apply because no part of the document, a part of which is now offered, was in fact offered by the defendant.

The Court: Let me ask a question and get this clear as to the volume and what is the number of the exhibit that you had a moment ago?

Mr. Mason: No. 206 for identification.

[fol. 5015] The Court: Now, Mr. Strouss, are all of the excerpts which you have now offered in evidence yesterday, are they taken from this exhibit 206?

Mr. Strouss: No, none of those were. I was just about, in order to complete the record, to make my offer. For these marked for identification, the excerpts from them that we will want to use, and then—

The Court: Then let the argument go to both the exhibits you offered yesterday, and the ones you are about to offer now.

Mr. Strouss: This is just an excerpt from Exhibit 206. I mean the parts. I offered the whole report, because I don't want any question raised about a part of it being offered. These are the parts we put in, we think it is shown that the matter is pertinent and material to the matter. Of course, if the exhibit goes in, why, the defendant would have the right to indicate such additional parts as they wanted:

Mr. Mason: That would be what I have referred to as the rule of verbal completeness.

The Court: Go ahead and complete your record, make your offers. The exhibit just handed the Clerk may be marked "Plaintiff's Exhibit No. 371 for identification," that being an excerpt from a volume entitled, "American [fol. 5016] Railway Association, Division 5, Mechanical."

Mr. Mason: Well, these are excerpts from Exhibit 206 for identification?

Mr. Strouss: Yes.

Mr. Mason: And it refers to the page of the original document?

Mr. Strouss: That is right.

The Court: Then the Clerk may mark these exhibits and call them in the order in which they are presented.

The Clerk: Plaintiff's Exhibit No. 372 for identification, consisting of 16 sheets, pages 8 to 17; Plaintiff's Exhibit 373 for identification, consisting of two sheets; and 374 for identification, consisting of one sheet only; Plaintiff's Exhibit 375, consisting of one sheet.

Mr. Mason: That is the excerpt from page 56, is it?

The Clerk: That is right. Plaintiff's — 376 for identification, pages 151 to 165.

The Court: Containing 21 sheets.

The Clerk: Plaintiff's Exhibit 377 for identification, consisting of four sheets, from pages 166 to 168; Plaintiff's Exhibit 378, one sheet, Table 293; Plaintiff's Exhibit 379 for identification, one sheet, Table 291; Plaintiff's Exhibit [fol. 5017] 380 for identification, Table 292; Plaintiff's Exhibit 381, one sheet; Table 290.

Mr. Strouss: On the objection, I expect to take it up more in detail after the recess.

The Court: Does this complete them, Mr. Strouss?

Mr. Strouss: Yes, this completes them.

The Court: Do I understand that the State has now offered, at least for identification, all of the exhibits you intend to offer in this case?

Mr. Strouss: Except, as I said this morning, there is some question as to the exactness of our exhibits relating to Tables 2450 and 2451 of the Accident Bulletin. I now intend to have those Tables copied and put in exhibits showing what those Tables are.

The Court: These constitute all of your presently prepared exhibits?

Mr. Strouss: I understand you don't question them?

Mr. Mason: No.

Mr. Strouss: Beg pardon?

The Court: The exhibits which have been marked constitutes all of your presently prepared exhibits?

[fol. 5018] Mr. Strouss: That is right. Now, on the objection, I will just very briefly state my views. On the matter which was taken from the annual reports, I am not prepared to speak, because Mr. Polley prepared those exhibits.

The Court: Before I hear you, may I interrupt, because I am not just clear, the exhibits introduced yesterday and marked for identification, to which objection was made and argument advanced a few moments ago, where were those excerpts taken from?

Mr. Strouss: Those excerpts were taken from the annual report.

The Court: Produced by Mr. Browning?

Mr. Strouss: They were produced, but you remember he had a bunch of books.

The Court: From his trunk at the hotel.

Mr. Strouss: Yes, dark-colored books about that long and about that thick (indicating).

The Court: In other words, Mr. Strouss, having had access to these books, records, and reports that Mr. Browning brought with him, you went through them and made excerpts from those different records you have now had marked for identification?

Mr. Strouss: Those were the ones marked yesterday.

[fol. 5019] The Court: Those were the ones marked yesterday. Now, the ones marked this morning all came from Exhibit 306?

Mr. Strouss: 206. The volume of reports by Mr. Johnson, Director of Safety, I believe his title was Director of Research.

The Court: You are directing your remarks to the exhibits marked for identification today or yesterday?

Mr. Strouss: I am directing my remarks to Exhibit 206, the volume itself, and that would also go to the excerpts which I have just now offered, which are excerpts taken from Exhibit No. 206.

The Court: Do you propose to offer in evidence the entire volume 206, which has already been marked for identification?

Mr. Strouss: Yes, it has been already offered in evidence. It was offered yesterday.

The Court: I will hear you now.

Mr. Strouss: Of course, with the understanding that each party, if admitted in evidence, each party, will indicate that part of the exhibit which they desire—

The Court: You have already indicated your part by [fol. 5020] offering these excerpts, Mr. Strouss.

Mr. Strouss: That is right.

The Court: Go ahead.

Mr. Strouss: Now, the Court will remember that Mr. Browning testified—well, first we will go back to the beginning of this case. Defendant called first Dr. Parmalee, and we were told a great deal about his learning and the reasons why we should take whatever he said concerning railroad operation as the facts, and his statements should be placed in evidence, and they were; then they called Mr. Otterback, and they both testified as to the Association of American Railways and the activities, that it represented the different roads, the different member roads in its activities, then Mr. Browning testified, and he testified concerning the rules of interchange.

The Court: Incidentally, he came here and his testimony was limited, except on your cross-examination, to the interchange rules.

Mr. Strouss: That is right, and particularly or including that covering airbrakes and explaining how those rules were developed. He also stated that the Association was the representative of the different member railroads and acted for them in making these investigations and developing the different rules, and that in developing the [fol. 5021] rule of interchange as to airbrakes, that it was done by tests and investigations. He said that they had this investigation under an order of the Interstate Commerce Commission, which was begun somewhere around 1924 and continued to about 1932, when Mr. Johnson made his report. There is, in the annual proceedings, in the excerpts offered yesterday, only what parts of the proceedings which shows that he did make his report in, I think it was 1932, to the Association. Then, in 1933, Mr. Browning testified that specifications were adopted as of September, 1933, I think the rules of interchange show, adopted specifications for airbrakes which are required upon all cars in interchange, effective January 1, 1945, and applying, as I believe the testimony showed, to cars, newly constructed cars, after, I don't remember whether it was

1933 or 1937. And he identified Exhibit 206 as the report. He stated that Mr. Johnson was in charge for the Association of American Railways of the investigation under the order of the Interstate Commerce Commission, and that this Exhibit 206 is the report of Mr. Johnson of that investigation, and the exhibit which was offered yesterday, one of them will show that at the annual meeting it was [fol. 5022] ordered that that report be printed and circulated, so certainly it became the action of the Association itself. And it is a little hard to see how the Southern Pacific can say in face of the evidence that the Association was not—

The Court: Are you relying upon an agency there?

Mr. Strouss: Well, there is an agency. I am relying upon two things: First, there is an investigation which the witness stated was made under the order of the Interstate Commerce Commission to determine the specifications of airbrakes which would be efficient to handle trains, and that it was made by the Association of American Railways, pursuant to that order; then there is the agency here, as the witness shows, all of those things are handled, as this witness testified, by the Association for the member railways, they don't do it themselves, and, certainly, in acting for the members, the Association is the agent, the representative, as Mr. Browning testified, of the member railways; and that when those tests are made, and the specification adopted and the rule adopted by the Association, the member railways became bound by it, as they have themselves shown by the rules of interchange developed from those investigations.

The Court: It seems to me, Mr. Strouss, there is this difficulty in your position, that as far as the defendant is concerned, they have brought here these witnesses, Browning, Otterback, and Dr. Parinalee, they have submitted themselves for cross-examination, and their knowledge, training, background and experience were all fully gone into. Now, I take it, a good part of these exhibits that were offered yesterday involve matters that this man Harley Johnson, that were peculiarly within his knowledge, he prepared the report, he participated in these tests.

Mr. Strouss: He was in charge of them, as the record shows.

The Court: Yes. Well, now the State is asking this Court to admit in evidence excerpts from these reports without having the man whose name is signed to them, the man who prepared them, present and sworn and an opportunity to cross-examine. That is, if they were admitted, then the defendant is precluded from any cross-examination, they just have to take the record as-is.

Mr. Polley: He works for the Southern Pacific Company in effect; they can get him here if they so desire. [fol. 5024] The Court: That is not their burden in the first instance.

Mr. Strouss: There is more than that, here is an association of which they are a member. This is a record made by them, and every other member of that association. If the rule were otherwise, the easiest way in the world for them to cover up is to have everything done by the association, which, as a matter of fact, the record shows, is what is done whenever there are any tests to be done with respect to railway equipment.

The Court: Well, it is something that all the railroads are interested in, and only a few places in America, such as Purdue University, have the necessary equipment and facilities to make those tests.

Mr. Strouss: This involves more than the rack test made by the Purdue University, this included the rack test made by the Purdue University and the road tests made on the Southern Pacific Lines in California and Oregon, the tests made on the lines of the Southern Pacific, and they were made by the Association acting for its members.

[fol. 5025] Mr. Booth: But we don't concur in that report and never have.

Mr. Mason: The report has never been adopted. The action of the Association is shown of record already, it is the adoption of these rules, we showed all that, that is, the only action the Association took, was the adoption of these rules. There is no showing, and there is nothing in the evidence to show that this report of Harley Johnson was ever adopted. These excerpts which were printed here, were merely printed for the information of members. I am satisfied they never were adopted. Aside from that, there is nothing to show that the Association has any more power to bind its members than the Tucson Chamber of Commerce. We are a member of that too. It acts for us.

and other members in Tucson, but we have dissented from them in matters.

Mr. Strouss: There is considerable difference with an agent acting for one who reports as to what he has actually done; certainly, it is admissible in evidence against the parties he represents whether they agree with his statement or not, the statement of his conclusions, anything of that sort, what he has done, is admissible against him.

[fol. 5026] The Court: Well, Mr. Polley wants to be heard, and there isn't time now on his phase of it, so the Court will make no ruling at this time with reference to these exhibits which have been marked for identification, to which objection is made to their introduction in evidence. Now, Gentlemen, there is just one other matter. Do I understand, Mr. Strouss, that so far as your witnesses are concerned, that the State has completed its rebuttal?

Mr. Strouss: Yes, that is true.

The Court: And you indicated, Mr. Mason, that you were going to want to cross-examine this last witness, Mr. Hardwicke, after the recess, and then how long do you anticipate it will take you to complete the cross-examination of this witness, and present your surrebuttal testimony?

Mr. Mason: May we have the case go over until April 29th? Will that suit your Honor just as well? There has been a lot put in here today that we did not anticipate, and it will take us some time to check it.

The Court: Then the record may show the Court will be at recess in this case until April 29, at ten A.M.

(Thereupon, the court stood at recess until April 29, 1941, at ten o'clock A.M.)

[fol. 5027] April 29, 1941, Ten o'clock A. M.

All parties being represented as heretofore noted; proceedings were resumed at this time as follows:

The Court: You may proceed.

Mr. Strouss: We have a little more to offer, if the Court please. Of course, the Court will remember that at that last session, we stated we would procure photostatic copies of certain pages. We have those. Then we are having copies made of the 1940 Form T's, which will not be ready, I understand, until some time tomorrow. There is one item that I

think counsel for the defendant has stated that they would present here, that is the 1933 specification for air brakes.

Mr. Mason: The current specification.

Mr. Strouss: The testimony shows that that is the current specification, but the transcript was the specification set out in the rules of interchange.

Mr. Mason: I understand that it is not set out in the rules of interchange.

Mr. Strouss: I mean referred to, I misspoke, I mean, referred to in the rules of interchange. Now, then, we have Exhibit 367. At the time it was put in I explained that [fol. 5028] through error the casualties to freight employees and the passenger-train casualties on the Salt Lake Division were put on one exhibit. Now, we have made separate exhibits of those, and if counsel is agreeable we would like to substitute the separate exhibits for the one, that is, separating the passenger from the freight.

The Court: It is the one carrying the No. 367. Will you give a new number to the other one?

Mr. Strouss: My suggestion is that it would be 367 and 367A.

The Court: Any objection to that?

Mr. Mason: No, none at all, your Honor.

The Court: Then the substitution may be made.

Mr. Strouss: I suggest that the casualties to employees in train and engine service be marked as 367 and the casualties to passengers and passenger employees be marked 367A.

The Court: They may be so marked.

J. S. HARDWICKE was recalled to the stand and testified further as follows:

Direct examination (Continued).

By Mr. Strouss:

Q. Mr. Hardwicke, I hand you a document entitled, "Inter-[fol. 5029] state Commerce Commission, Bureau of Statistics, Accident Bulletin 105, Calendar Year 1936." Did you cause photostatic copies to be made of Tables 24, 50 and 51 in this?

A: I did.

Mr. Mason: Three Tables, is that, Nos. 24, 50 and 51?

Mr. Strouss: Yes. I ask that this document entitled.

"Interstate Commerce Commission, Summary No. 24," be marked for identification.

The Court: It may be marked.

The Clerk: Plaintiff's Exhibit No. 382 for identification.

Mr. Strouss: Mr. Hardwicke, I hand you Plaintiff's Exhibit No. 382 for identification. Is that a true photostatic copy of Summary 24 appearing on Page 16 of Bulletin 105.

A. It is.

Mr. Strouss: We offer this in evidence.

Mr. Mason: No objection.

The Court: It may be admitted.

(Thereupon, the document referred to was received in evidence, and marked "Plaintiff's Exhibit No. 382.")

Mr. Strouss: We ask that Table 50, photostatic copy of [fol. 5030] Table 50 be marked for identification.

The Court: It may be marked.

The Clerk: Plaintiff's Exhibit No. 383 for identification.

Mr. Strouss: And a photostatic copy of Table 51.

The Court: It may be marked.

The Clerk: Plaintiff's Exhibit No. 384 for identification.

Mr. Strouss: Mr. Hardwicke, I hand you plaintiff's Exhibit 383 for identification, and ask you if that is a true photostatic copy of Table 50 appearing at page 18 of Accident Bulletin 105 of the Interstate Commerce Commission?

A. It is.

Mr. Strouss: We offer this in evidence.

Mr. Mason: No objection.

The Court: It may be admitted.

(Thereupon the document referred to was received in evidence and marked, "Plaintiff's Exhibit No. 383.")

Mr. Strouss: Mr. Hardwicke, I hand you Plaintiff's Exhibit 384 for identification, and ask you if that is a true photostatic copy of Table 51, page 19, Accident Bulletin, 105, of the Interstate Commerce Commission?

[fol. 5031] A. It is.

Mr. Strouss: We offer this in evidence.

Mr. Mason: No objection.

The Court: It may be admitted.

(The document referred to was received in evidence and marked, "Plaintiff's Exhibit No. 384.")

Mr. Strouss: Now, we offer in evidence a certified copy of the Report of the Interstate Commerce Commission in Cause No. 13528, decided July 8, 1924, Power Brakes.

Mr. Mason: We have no objection, your Honor, and the certification, of course, is not necessary. This is the published pamphlet copy of a decision of the Interstate Commerce Commission, of which the courts under Section 14 of Part 1 of the Interstate Commerce Act are required to take judicial notice when they are called to their attention. I have no objection to its being offered as an exhibit.

The Court: It may be admitted.

(The document referred to was received in evidence, and marked, "Plaintiff's Exhibit No. 385.")

The Court: Mr. Strouss, referring back to Exhibit No. 367, as originally admitted in evidence on April 17th, it [fol. 5032] is my understanding now, that by the substitution of these two other sheets, that this original exhibit is to be destroyed?

Mr. Strouss: Withdrawn, yes.

[fol. 5033] Mr. Polley: The court will remember when we introduced exhibit No. 338 entitled, "Casualties to Employees, Train and Train Service Accidents, Freight Service in the State of New Mexico," we inadvertently omitted the year 1933. I have just handed the clerk an exhibit entitled, "Casualties to Employees, Train and Train Service Accidents, Freight Service in the State of New Mexico." Mr. Hardwicke, did you prepare that exhibit?

A. Yes, sir.

Mr. Polley: May we have this marked for identification?

The Court: It may be marked.

The Clerk: Plaintiff's exhibit No. 386 for identification.

Mr. Polley:

Q. Was it prepared in the same manner as exhibit No. 338?

A. Yes, sir.

Q. Is it true and correct in all respects?

A. All with the exception of a typographical error, a word misspelled at the bottom. The word "derailed" is spelled "detrained."

Q. With the exception of that, it is correct?

A. It is correct.

Mr. Polley: We offer the exhibit in evidence.

Mr. Strouss: May the letter "t" be stricken so it reads [fol. 5034] "derailed" instead of "detrailed"?

Mr. Mason: This designation "slack accident," Mr. Hardwicke, with the star, that is your own interpretation of what is revealed by the form T reports?

A. Yes, sir.

Q. Is this showing under the column "Description of Accident" a complete statement of what appears as the cause of accident on the form T report or merely your abbreviation?

A. It is stated in the cause above, I think it is item 17 of the form T report which says "Cause Briefly."

Q. You have shown in detail what appears on item 17 on each of these form T reports?

A. Yes, sir.

Q. You used nothing else but the form T reports in preparing exhibit No. 386?

A. That is right.

Mr. Mason: Your Honor will recall an objection to exhibit No. 338 on the ground that as to the star and the notation "slack action" we made an objection on the ground that that part of the showing represented the opinion of the witness and was incompetent because he had not shown any proper qualification. That is the only [fol. 5035] objection we have to exhibit No. 386.

The Court: That objection is overruled. It may be admitted.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 386.")

Mr. Strouss: Exhibit No. 203 which is the rules of interchange, it was understood such parts of that as either party desired could be read into the record. On page 275 appears a form of interchange agreement which we ask be written into the record.

The Court: You just want to have that copied?

Mr. Strouss: Yes.

Mr. Mason: That includes only page 275 and no other page?

Mr. Strouss: That is all I have asked for so far.

Mr. Mason: As to the item just mentioned there is no objection.

The Court: It may be copied into the record then.

[fol. 5036] Form of Interchange Agreement

The subscriber hereto adopts and agrees, jointly and severally, with each and all other parties, (whether corporations, partnerships or individuals) owning or possessing railroad cars used for the transportation of commodities, which parties have respectively entered into agreements in effect similar to this instrument, that the Subscriber will abide by the Code of Rules governing the condition of, repairs to and settlements for freight cars for the interchange of traffic, as formulated and promulgated by the former Master Car Builders' Association and by the Association of American Railroads (Division V—Mechanical), or by either thereof (which rules are designated on the minutes of said Association's proceedings and are commonly known as "Interchange Rules"), and by each of said rules, and as well will abide by each and all decisions and interpretations of the Arbitration Committee provided for by said Code of Rules, until this agreement on the part of the Subscriber shall be terminated by three months' notice in writing, filed with the Secretary (or such other officer as from time to time shall be acting as Secretary) of said Railroad Association, or of such body as [fol. 5037] shall at the time have succeeded thereto.

Dated, signed and sealed this _____ day
of _____, A. D. 19 _____

By _____

President.

Attest: _____

Secretary.

Witnesses to Execution by Subscriber:

(Seal)

(Seal)

(Seal)

Mr. Strouss: On page 277 appears the heading "List of Railroads and Car Owners Which Have Executed the Freight Car Interchange Rules Agreement." On page 301 as a part of that list appears the defendant company and I would like to have—I don't want to put that whole list in because it takes about—

[fol. 5038] Mr. Booth: I think it could be broadened to stipulate that all of the railroads and officials of railroads who have appeared in this case are parties to that agreement.

Mr. Strouss: Including the defendant.

Mr. Booth: Yes.

Mr. Strouss: That is all right.

The Court: Then the record may show the stipulation.

Mr. Strouss: I have one or two questions I want to ask concerning these exhibits. Mr. Hardwicke, exhibit No. 334, "Highway Grade Crossing Accidents Where Auto Involved," it appears from that exhibit that the information contained therein was taken from table 24 of the Interstate Commerce Commission Accident Bulletins for the years shown, is that correct?

A. Yes, sir.

Q. Plaintiff's exhibit No. 382 you have testified is table 24 for the year 1936 in the Interstate Commerce Commission Accident Bulletin for that year, is that correct?

A. Yes, sir.

Q. Is that typical of the pages appearing in the bulletins for each of the other years?

Mr. Mason: I object to the question, the pages of the [fol. 5039] bulletin are themselves the best evidence and the statements of the witness as to whether or not they are typical are obviously incompetent.

The Court: I will hear you on that, Mr. Strouss, I am inclined to sustain the objection.

Mr. Strouss: If counsel insists upon me putting all those in I will put the bulletins in but I was trying to get away from building up the record here. I can put the best evidence in.

Mr. Mason: It seems to me, your Honor, that the bulletins themselves are available and copies are readily made by the photostatic process. If it is desired to put in corresponding pages, it can be easily done.

The Court: Just what do you have reference to, Mr. Strouss? Will you read the question, Mr. Reporter?

(The record was read by the reporter.)

The Court: Technically the objection is good, but rather than build up the record I am going to overrule it.

Mr. Mason: I would like to have the witness specify what other years.

Mr. Strouss: I haven't had a chance to finish my questions when I was interrupted. I was about to ask him the years [fol. 5040] which are indicated on the exhibit No. 334.

A. 1929 to 1939, inclusive.

Mr. Strouss:

Q. Referring to exhibit No. 334, the year 1936 under the column headed "Arizona Accidents" appears the figure 13?

A. That is the total number of accidents.

Q. Where did you get that figure 13?

A. I got that in the first column under the heading "Number of Accidents."

Q. There are two columns headed "Number of Accidents"?

A. In the casualties resulting from accidents in which automobiles were involved.

Q. Referring to exhibit No. 382, is that the fifth column of figures appearing on exhibit No. 382?

A. Of table 24?

Q. Yes.

A. That is correct.

Q. Under the heading "Casualties" appears the figure 20 for the year 1936. Where did you get that figure?

A. That is for Arizona?

Q. For Arizona.

A. Five killed and 15 injured, the total is 20.

[fol. 5041]. Q. Those figures appear in columns—

A. (Interrupting) Three and four.

Q. No, this exhibit refers only to accidents where automobiles were involved, columns 7 and 8?

A. That is right, 5 killed and 15 injured.

Q. I hand you plaintiff's exhibit No. 383, photostatic copy of table No. 50 appearing in the Accident Bulletin for the year 1936 and ask you if that is in form typical of the tables

appearing in the Accident Bulletins for each of the other years?

A. That is correct.

Mr. Mason: I ask that the answer be stricken.

Mr. Strouss: Wait until I finish the question, on exhibit No. 336.

Mr. Mason: If the question is intended to elicit from the witness a statement that there is a similar table for each of the years 1929 to 1939 corresponding to the table represented on exhibit No. 383 or a series of similar tables, because there are actually several under the heading, I have no objection to it. If it is intended to elicit from the witness his conclusion that this table is typical, I have the same objection as to the question which was asked in connection with exhibit No. 382. I assume there is a similar table No. 50 in each of the Accident Bulletins for the several [fol. 5042] years last past.

The Court: Is that what you desire to establish?

Mr. Strouss: Yes, I was asking if it was typical in form.

The Court: You are not going into the contents of those other schedules?

Mr. Strouss: No, of course not.

The Court: The record may show the stipulation which obviates the necessity of your referring to each of these other years.

Mr. Booth: It is the same form but different figures.

Mr. Mason: I have no objection to that type of question at all.

Mr. Strouss: That would be true of table 51, which is exhibit No. 384.

Mr. Mason: Yes.

Mr. Strouss:

Q. You testified concerning exhibit No. 335, Mr. Hardwicke, "Highway Grade Crossing Accidents," all accidents at highway grade crossings. Under column "Arizona Accidents, 1936," appears the figure 13. Where did you get that figure?

A. That is in the first column under "Number of Accidents."

[fol. 5043] Q. And the total casualties?

A. Twenty, five and fifteen.

Q. That is the total of columns 3 and 4?

A. Yes, sir.

Q. In the third column of exhibit No. 335 as well as in the third column of exhibit No. 334 under "Arizona" appears under the heading "Autos Registered" the figure 115,035 for the year 1936. Where did you get that figure?

A. I got that under the number of total automobiles registered in Arizona for the year 1936.

Q. That is column 9 of exhibit No. 382 of table 24?

A. That is correct.

Q. The figures appearing under the headings in New Mexico and Nevada for these two exhibits were taken from table 24 in the same manner?

A. In the same manner.

[fol. 5044] Q. Now, referring to Table No. 50 in Exhibit No. 336, grade crossing accidents classified as to Trains striking autos and autos running into trains, ICC Accident Bulletin Table 50, years 1935, 1939, appear two columns, one "Struck by Train" and the other "Ran into side of train." Under the column "Struck by train," for the year 1936 appear the figures 2680. Where did you get those figures from, Mr. Hardwicke?

A. I got that from the number of accidents in the first column, which was 2594, the first item, Train Service Accidents; in addition to that I took in that same column below "Train Accidents" 86, and added the two together to make a total as shown by the exhibit for the year 1936.

Q. In other words, you took the total accidents appearing under the heading, "Struck by Train?"

A. Struck by train.

Q. In both train and train service accidents?

A. That is right.

Q. And under the column "Ran into side of train," in exhibit 336, for the year 1936, appear the figures 1441. Where did you get that figure?

A. That is the total in the same column of 1393 and 48 added together for the year 1936.

Q. In other words, that is the total of train and train [fol. 5045] service accidents?

A. That is correct.

Q. Under heading "Ran Into Side of Train?"

A. That is correct.

Q. Were the figures for the other years arrived at in the same way?

A. In the same manner.

Q. Now, in Exhibit 337, Plaintiff's Exhibit 337, Casualties to Non-Trespassers, Table 51, under the heading "Arizona," appear columns headed "Killed," "Injured," "Total Casualties." For the year 1936 appears under the column "Killed" the figure "11." Where did you get that figure?

A. I got that in the fourth column near the top of the page and in the fifth column, 11, 99, and a total of 110 casualties to non-trespassers.

Q. That is the fourth and fifth columns of table No. 51?

A. 51.

Q. Under the heading "Nevada" under the column "Killed and Injured," appears the figures 9 and 36?

A. That is correct.

Q. Where is that taken from?

A. That was taken from the same columns opposite the State of Nevada.

[Col. 5046] Q. And the total is the total of the killed and injured?

A. That is right.

Mr. Strouss: That is all.

Mr. Mason: Mr. Strouss; perhaps this will obviate some questions of the witness. I take it, the purpose of the exhibits 382, 383 and 384 in your discussion is to lay the foundation for exhibits 334, 335, 336 and 337, and show that they were traceable back to the Accident Bulletin?

Mr. Strouss: That is correct.

Mr. Mason: And in your questioning of the witness as to whether these exhibits were typical I take it you didn't mean to infer that they were other than similar in form, not that the figures didn't vary from year to year?

Mr. Strouss: No, just similar in form.

Cross-examination

By Mr. Mason:

Q. Now, Mr. Hardwicke, I would like to have you turn if you will to your Exhibit No. 338. First, of all, I would like to ask you, having in mind the exhibit just introduced covering the 1933 New Mexico casualties, if this Exhibit

No. 386 doesn't show the same items and with the same dates, [fol. 5047] the year only being omitted, as are shown in the third, fourth, fifth and sixth items at the top of page 3 of Exhibit 338?

A. For what year?

Q. Well, will you look at Sheet 3 of Exhibit 338?

A. That is correct, the year has been omitted. The same four accidents that are in this exhibit you speak of now, these four accidents are contained under the year of 1932.

Q. Then it would be correct if, on sheet 3 of Exhibit 338, you were to insert the year 1933 in words and figures immediately after the second, and immediately prior to the third line, wouldn't it?

A. That is right.

Q. And to that extent, Exhibit 386 is a duplication of 338?

A. Yes, sir.

Mr. Strouss: I might say that my reason for having that made up was counsel's statement the other day that 1933 was left out of here. I didn't myself check the exhibit to find out. I don't want to have this duplication in there. If agreeable, I would like to withdraw the one put in this morning.

[fol. 5048] Mr. Mason: I have no objection.

Mr. Strouss: And the original exhibit corrected to show the year 1933 between the second and third lines on page 3 of Exhibit 338.

Mr. Mason: Yes. Then Exhibit 386 will be withdrawn.

Mr. Strouss: Exhibit No. 386 will be withdrawn.

The Court: The correction may be made on Exhibit 338 and Exhibit 386 is withdrawn.

Mr. Mason: Now, going to Sheet 1, Mr. Hardwicke, will you refer to the item showing an accident on April 28, 1930, at VeVay, New Mexico?

A. Yes, sir.

Q. You show there as casualties Conductor Prickett and Brakeman East with a notation "None." It is a fact, is it not, that those men were not reportable casualties?

A. No, sir, they were not reportable casualties. They were added to the report, their names were shown on the original Form T report.

Q. Weren't their names stricken out?

A. No, none stricken out, they were on the report at that time, and hadn't been stricken from it at the time we checked it, the photostatic copy.

Q. You know, of course, Mr. Hardwicke, that a casualty, [fol. 5049] so-called, in which an employee suffers no loss of time because of disability, is not a reportable casualty?

A. I do.

Q. Didn't this exhibit purport to be a showing of reportable casualties?

A. Yes, sir, it is, but where the word "none" was used, those names were added to the Form T report and I intended to have a true copy of the report by adding those names, and the word "none" had been added to the report.

Q. The word "none" appears on the original form T report?

A. Yes.

Q. Showing these were not reportable casualties?

A. Yes, sir, that is right. They were in the train crew at that time.

Mr. Mason: Those Form T's are in evidence, aren't they?

Mr. Strouss: Yes.

The Witness: Yes. That is, for the year 1930, that was on April 28th.

Mr. Mason: Mr. Hardwicke, the photostatic copy of the Form T report that I have before me here indicates that the names of Mr. Prickett and Mr. East and the description of their injuries were scratched through, and I assume [fol. 5050] that is a counterpart copy of the original on file with the Interstate Commerce Commission?

A. Well, in other words, Mr. Prickett's name has also been scratched through at some time.

Q. Both East and Prickett are scratched through, and Province was not?

A. In the photostatic copy we took that, myself and another man checked it, it was a blur on the photostatic copy.

Mr. Strouss: I think that the Form T in evidence will speak for itself. Part of it there, it is quite questionable whether it has been scratched through or not.

The Court: Well, the record does speak for itself. It shows some line drawn through.

Mr. Strouss: I don't take it we are limited to the proof of what are simply reportable casualties?

Mr. Mason: You are not limited, but ~~the witness him-~~self, in introducing this exhibit, indicated that it was a reportable casualty. I take it that we are not interested in unreportable casualties not resulting in disability.

The Court: I don't think the witness had indicated he has any personal knowledge of it.

[fol. 5051] Mr. Mason: No, it is based on the Form T report.

Q. Now, Mr. Hardwicke, I would like to have you look at the accident on December 24, 1930, at Luna, New Mexico, which shows a seven-day disability to Conductor Sale, and on a seventy-car train, and I will ask you if the Form T report doesn't indicate that this accident was due to an emergency application of the air brakes causing an abrupt stopping of the train, throwing Conductor Sale against the stove in the caboose, causing him bruises and so forth.

Mr. Polley: Wait a minute. Let him see it.

Mr. Mason: I am going to let him see it, certainly. Counsel hasn't furnished us with an extra copy of it.

A. The detail on the bottom of the report and on the back of it is shown here, resulted in an emergency application. However, under Item 17, "Cause briefly," the report says, "Derailed by hatch cover of car on track," and it shows Conductor Sale with a probable loss of time of twenty days.

Q. Well, Mr. Hardwicke, my question of you on this particular accident, is this, where the form T report showed an injury due to an emergency application and an abrupt [fol. 5052] stop, will you explain to me why you didn't use a star and indicate this as being a slack action accident?

A. Well, I don't know hardly how to answer that, except that I used the item at the top of the report to determine briefly whether there was any slack action. Sometimes, on the report, the detail is shown below, would be a part of the report. However, they would carry a notation, "Not admitted by carrier." That one doesn't show that.

Q! Mr. Hardwicke, then you selected what you wanted off the Form T report for the purposes of this Exhibit 338, didn't you?

Mr. Strouss: I object to that. That is not a proper question. He testified that he has taken his statements from the Form T under the item, "Cause briefly." Now,

the heading of the Form T, as your Honor will see by looking at it, has a statement on the form itself, "Cause briefly." Item 17, the witness has testified that that is the matter that he took in preparing this exhibit and used just the words of the exhibit itself.

The Court: No, the objection will be overruled. He may answer.

A. No.

[fol. 5053] Mr. Mason: Well, Mr. Hardwicke, it is not possible, is it, that you failed to include this as a slack action accident or an accident caused by sudden stop-start lurch or jerk of train because it just happened to be seventy-cars?

A. No, it is not.

Q. Did you, throughout your Exhibit 338, confine yourself entirely to the showing in Item 17, and pay no attention to the narrative or detail of cause shown in Item 26?

A. No, I did not.

Q. You paid no attention to Item 26?

A. Sometimes I did if the information above was not sufficient to determine, then we read Item 26 at times, to try to determine as to whether or not the detail showed there was slack action.

Q. So, sometimes you used Item 26 and sometimes you didn't read it at all?

A. There was a lot of cases you didn't need to use it, because it was carried in Item 17 that they think the accident was caused from slack action or sudden jerks of the train.

Q. You particularly didn't read Item 26 referring to this accident to Conductor Sale which said that "The engineer made an emergency application of the air brakes, causing [fol. 5054] an abrupt stop, throwing Conductor Sale against stove in caboose, causing bruises about right arm and right side." You didn't read that?

A. I don't remember whether I did or not.

Q. Now, having that called to your attention, Mr. Hardwicke, you have seen it, have you?

A. Yes, sir.

Q. Don't you agree with me that you should star this accident to Conductor Sale and include it among the other accidents as to which you have placed a star on your Exhibit No. 338?

A. I do, yes.

Q. Do you want the exhibit corrected accordingly?

A. Either way you want to.

Mr. Strouss: We will stipulate that it is a slack action accident.

Mr. Mason: All right. Now, let us look at Sheet 3, October 21, 1934, at Deming, New Mexico, First 980, Conductor Carden. You show this, Mr. Hardwicke, as a slack action accident due to the man losing his handhold on the ladder of the car when the slack ran out in a train of 92 cars. I want to call your attention again to the narratives of the accident. I will read this to you, and ask you to [fol. 5055] verify it: "Engine 5034, First 980, was backing up with 18 cars to couple with balance of train preparatory to departing from Deming. Conductor Carden was standing on stirrup step of side ladder S.P. Gondola 47168, second car from engine. As speed of engine and cars was reduced preparatory to making coupling, slack ran out and the jerk caused Conductor Carden to lose handhold and fall to the ground." I will ask you if I haven't read correctly the substance of Item 26?

A. Yes, that is right.

Q. Then, in reality, Mr. Hardwicke, this was an 18-car switching accident, and not a slack action accident on a 92-car train, was it?

A. Well, no. It says, "Kind of train, first 980, 92 cars, Engine 5034, East, four miles per hour."

Q. Yes, Mr. Hardwicke, but the Form T report, the same sheet, the one you supposedly depended upon, shows that there were 18 cars being handled and that this man fell off when the slack ran out of the 18-car cut during the switching?

A. That is right.

Q. Isn't this, then, an 18-car accident and not a 92-car accident?

[fol. 5056] A. Well, it is a switching movement.

Q. Doesn't it show on the face of the Form T that it is a switching movement?

Mr. Strouss: The Form T speaks for itself.

Mr. Mason: The witness tries to speak differently for it here on exhibit 338. I am trying to get him to tell us about it, that is all.

The Court: The objection is overruled. You may answer.

Mr. Mason: Mr. Hardwick, you won't agree, then, that this is an 18-car accident which happened during a switching movement?

A. No; I would say it is a slack-action accident if the slack ran out hard enough to jerk him loose from the car.

Q. On an 18-car movement, however?

A. That is correct.

Q. There were only eighteen cars being handled?

A. That is correct.

Q. It was a short-train slack action accident?

A. Unless he had been coupled into the whole 92-car train.

Q. But the Form T report in evidence as part of Exhibit No. 344 shows that he didn't have hold of the entire 92 cars.

A. It does.

[fol. 5057] Q. Then shouldn't we correct your exhibit to show this as a slack action accident on 18 instead of 92 cars?

Mr. Strouss: May I see that form T, please?

A. It can be shown.

Mr. Mason:

Q. Now, let's refer to sheet 5 of your exhibit No. 338, accident at Mongola, New Mexico, June 30, 1937. Mr. Hardwicke, you show that brakeman Fountaine lost 21 days. I will ask you to refer to the form T report which is part of exhibit No. 347 and state whether or not the form T report does not indicate that Mr. Fountaine lost no time at all?

A. That is correct.

Q. Let's look at the last item on the exhibit, accident October 18, 1939, at Tularosa, conductor Benson, on sheet No. 7. I have before me the form T report being part of exhibit No. 349, and item 26 as I read it shows: "As train brought to stop conductor standing in caboose lost balance and fell to floor of caboose." Shouldn't that properly have been starred as a slack action accident?

A. No; a man could lose his balance and fall from a service stop. There wasn't any detail to show that they made a sudden start or hard stop.

Q. You omitted that as a slack action accident because [fol. 5058] there wasn't anything to indicate a sudden stop. It was simply a case of losing balance and falling in the caboose?

A. No, from a service stop a man could lose his balance in a caboose.

The Court: We will take our mid-morning recess at this time.

(Thereupon the court took a short recess after which proceedings were resumed as follows.)

Mr. Mason: I think at the recess, Mr. Hardwicke, we were talking about this accident to conductor Benson at Tularosa on October 18, 1939?

A. Yes, sir.

Q. I want you to refer, if you will, back to sheet 5 and go down the sheet to June 17 at Alamogordo, an accident to brakeman P. M. Welsh.

The Court: What exhibit is this, please?

Mr. Mason: Exhibit No. 338, the name is misspelled, it should be "Welsh."

Q. Have you the item?

A. Yes, sir.

Q. I notice that you have it starred?

A. Yes, sir.

Q. The description of the accident that you put there, "Lost balance and fell from train," is very little different [fol. 5059] from the description that you show for the accident to conductor Benson on sheet 7, "Lost balance and fell." Why did you star the one and not the other?

A. "Lost balance and fell from train"—I can't remember now just what other detail there was on the Welsh report.

Q. You used the detail?

A. I used the detail.

Q. I have the report before me here and here is what it reads, under item 26—item 17, "Lost balance and fell from train" is what you have on the exhibit but here is what item 26 says, "As stop of train was made, this employee lost his footing or balance and fell from top of car to ground. Stop made by conductor opening valve in caboose

due to having missed train order." Do you find anything in there that indicates slack action?

A. Well, no, with the exception that naturally a train of that length if it was stopped by the conductor's valve it would create more or less slack action in the train.

Q. That is your judgment. There is nothing on the form T to indicate slack action, is there, any more than there is on the form T covering the Benson accident?

A. No, but the Benson accident could have been a slack [fol. 5060] action accident because going three miles an hour with a stop of the train it could have been classed as a slack action accident and might have caused the man to fall to the floor of the caboose. Naturally there was something to fall over that caused him to fall.

Q. So far as the form T reports are concerned, Mr. Hardwicke, the Welsh accident and the Benson accident stand practically on all fours, don't they? There is no indication of slack action in either one?

A. Well, yes, there is indication of slack action in the Welsh report because an application of the air from the rear end at the conductor's valve would naturally cause some slack action on that kind of a train.

Q. Does it show on the form T report?

A. No, it doesn't show it on the form T report but as a matter of knowledge of these types of trains a man knows what happens in that kind of stop.

Q. You used your independent judgment and did not depend on the form T report in assigning slack action as a cause of the Welsh accident?

A. To some extent, yes.

Q. You did likewise, used your independent judgment [fol. 5061] in refusing or failing to assign slack action as a cause of the Benson accident?

A. Well, I just overlooked that portion of it.

Q. I think you agree with me that the form T reports indicate substantially the same character of circumstances, a stop of the train and a man falling from the train or in the caboose?

A. No, it doesn't indicate exactly the same for this reason, that one was made from the brake valve on the locomotive and the other was made from the conductor's valve on the rear end of the train.

Q. Does the form T report, aside from your judgment, indicate a sudden stop in either case?

A. Yes, the fact that the man got hurt, either one would indicate there was not a natural, normal stop.

Q. Have you exhibit No. 366 before you? That is the 1940 train and engine service accidents in Arizona.

A. I have.

Q. Will you note this accident to brakeman Alexander at Dragoon on March 16th. Your description of the accident shows, "Train made rough coupling to caboose." If the jerk which caused conductor Carden to fall and be [fol. 5062] injured at Deming, which you have shown on the New Mexico exhibit, No. 338, if that could be classed as a slack action accident will you explain why this rough coupling and jerk which apparently caused brakeman Alexander to be injured should not equally be classed and starred?

A. I will answer that in this way, that after cutting a helper engine out at Dragoon, I think the detail of that report is in backing up to couple onto the caboose brakeman Alexander was standing on top of the caboose and when the coupling made he was either knocked over the cupola or knocked down on top of the caboose. That was just a coupling into the caboose which may have been a rough coupling.

Q. It was part of the process of remaking the train, really a switching movement?

A. Yes, it was backing up to couple onto the caboose after the helper engine had been cut out ahead of the caboose.

Q. I take it you omitted that because it was an accident occurring in a switching movement?

A. Not necessarily that. It was the way that it happened from a rough coupling rather than from a rough stop of a full train. He was only standing on the caboose [fol. 5063] before the train had coupled into it.

Q. If it was due to rough handling of a part of the train and not of the full train, it does fall into the same classification of the Carden accident at Deming where the move was being made with 18 cars, doesn't it?

A. No, the Carden accident shows they hadn't coupled into the train at that particular time but stopped prior to coupling into the train. This was in the movement and backing up of the caboose to couple on, more or less a

switching movement and it may have been at a too high rate of speed which caused a rough coupling.

The Court: Mr. Hardwicke, on that same page under date of May 3d, does that purport to give an account of an accident or injury which you received personally?

A. Yes, sir.

Mr. Mason:

Q. This accident that you personally received at Wymola on May 3d of last year, were you acting as a brakeman at that time?

A. Yes, sir, I was the rear brakeman on a local freight train between Phoenix and Tucson.

Q. Had you made a meet at Wymola?

A. We were heading in there to meet a passenger train at that time.

[fol. 5064] Q. This was when you detrained to get the switch?

A. No, I had lined up the switch and in an effort to catch the caboose which was moving at probably six or eight miles an hour, running to catch the caboose I stumbled and fell over either rocks or slag and my knee hit the tie, tearing the ligaments loose on the inside of my knee.

Q. That is not an infrequent cause of disability to brakemen, is it?

A. Not in this particular year, no, there were a lot of them about that same time.

Q. Let's look at exhibit No. 351, please, and refer to this accident at Aurant, California, brakeman Davis, page 1, January 28, 1930. Isn't it a fact, Mr. Hardwicke, that the form T report shows that Davis was injured because of the caboose door having closed on his hand on account of run-in of slack which swung the caboose door against him. Do you remember the form T report?

A. No, I don't remember what the detail was but this was stated under "Cause Briefly." It said, "Caboose door closed on hand." They were running ten miles an hour and that could have been caused that way.

Q. You didn't pay any attention to item 26?

[fol. 5065] A. I may have, I don't remember whether I did or not.

Q. At the same page, at the foot of the sheet, April 26, at Aurant, conductor Cooper, you show an injury there, a probable disability of 45 days on account of "Driverless truck and trailer rolled foul of track." Isn't it also true that the form T report shows that the engineer made an emergency stop of the train as a result of which conductor Cooper was injured?

A. It may have, I haven't got the form T report.

Q. If it does so show wouldn't it be proper to indicate this accident to conductor Cooper as a slack action accident?

Mr. Polley: We object to that until it is brought out whether this form shows it or not.

Mr. Mason: This is this man's exhibit. Doesn't he know anything about it?

The Court: Show the exhibit to the witness.

Mr. Strouss: I don't think there is any necessity for counsel to yell at us like that because we make an objection. We have a right to do that.

The Court: You are probably right, Mr. Strouss. Show him the exhibit.

[fol. 5066] The Witness: I can't recall all the detail on the form T at this particular time. A driverless truck and trailer rolled foul of the track may have caused an emergency stop, I can't say without having the form T available.

Mr. Strouss: I have asked the clerk to bring in the form T's which cover this exhibit.

Mr. Mason:

Q. Going to sheet 2 of the same exhibit, No. 351, May 13, 1930—wait a moment, I will pass that one—June 6, 1930, at Alhambra. That was actually a yard accident, wasn't it?

A. I think it was a switching movement of a train. It may have been that they were switching in the yard at Alhambra at that time. I don't think it was a yard injury. I think maybe that is the way it was classified on the report.

Q. Your exhibit shows that the train number was YD-2659E. What does the "YD" mean?

A. That is the abbreviation for "yard."

Q. Doesn't the form T report, copy of which I now show you, indicate that it was a yard accident, it was an item on the form T report which shows the word "yard" at the top of the sheet?

A. That is right, it may have been a yard accident. Not being familiar with the switching movement at that time, [fol. 5067], it may have been a yard crew working at Alhambra.

Q. The form T report shows that it was a yard accident, doesn't it?

A. Yes.

Q. Let's go back to this accident to brakeman Davis at Aurant on January 28, 1930. Item 26 of the report which is a part of plaintiff's exhibit No. 361 reads as follows: "Davis was standing with his left hand on door jamb of caboose and as engineer released the air the slight slack action on the rear end caused the door to slam shut on his hand, bruising first finger." Isn't that correct?

A. That is correct.

Q. Going to sheet 5, you show on November 19th at Colton an accident in which conductor Breen and brakeman Curley were both injured and indicate that that occurred in 1931?

A. That is correct, it shows here it was in 1931.

Q. I have here exhibit No. 357 which consists of copies of the form T reports for the Los Angeles division for the year 1936 and I am going to show you a sheet for November 19, 1936, showing an accident to an extra train consisting of 52 cars which occurred at Colton and in which conductor [fol. 5068] Breen and brakeman Curley were injured and ask you if that is correct?

A. That is right.

Mr. Strouss: May I see that, please?

Mr. Mason:

Q. This is incorrectly shown as 1931, then?

A. It is shown in the wrong year.

Q. It should be in 1936?

A. That is right.

Q. Isn't that equally true of the balance of the accidents shown between the one on November 19th at Colton and the year 1932 at the foot of the sheet? That those other five there, Ventura, Pomona, Colton, South Fontana, and Cabazon, should all be shown as 1936?

A. Yes, instead of 1931.

Q. Let's look at sheet 12, 1935, an accident on December 23d at Los Angeles, brakeman Richardson. You show in the description of the accident, "Claims knocked off top of

train by sudden stop of train." Isn't that the same type that you have indicated by a star in various other places where a sudden stop is alleged to be the cause?

A. Whether the detail shows "Knocked off top of train by sudden stop of train," there may have been some investigation developed that admitted that.

Q. Will you read the detail of the accident as shown in item 26 on the form T report covering that accident?

A. (Reading) "Richardson who was on top of caboose as train pulled into yard claims while standing in back of cupola holding on to hand railing severe run-in of slack action on rear end of Train due to sudden stop caused his hand-hold to be broken and him to be knocked off top of train."

Q. Doesn't that indicate that this was a slack action accident?

A. It would indicate that it was a slack action accident. However, the word "claims" was used and there doesn't seem to be any determination of whether or not his statement was correct.

Q. Let's look at sheet 11, the next item to the bottom. You show a 30-day disability to brakeman Rice, "Claims thrown off balance in cupola of caboose as stop made."

A. What is the date?

Q. September 19th at Mesquite, California. That was in the same year and was designated apparently in the same way, "Claims," and you starred that?

[fol. 5070] A. Yes.

Q. But you didn't star this other one where Richardson claimed he was knocked off by slack action. That is correct, isn't it?

A. That is right.

Q. The only difference that I can see, and you can amplify this difference if you desire, the only difference I can see between the accident to brakeman Rice and the accident to brakeman Richardson in the essential cause or the essential circumstances is that brakeman Rice whom you starred was injured on a 97-car train and brakeman Richardson was injured on a 43-car train?

A. No, that is not the difference altogether. There may have been an oversight. I always do these reports; I classify slack action accidents according to the number of cars in a train where I have sufficient information to do it, but this may have been overlooked.

[fol. 5071] Q. Now, sheet 21 of this exhibit—first of all, I want to ask you if this exhibit 351 is not indicated to be a showing of casualties to employees, trainmen and engine-men only, is that correct?

A. Yes, injuries. This livestock caretaker at the bottom, let's see—

Q. He is not an employee?

A. No, he is not an employee, he is a man carried under contract.

Q. He doesn't properly belong in this exhibit then?

A. No, he doesn't belong there.

Q. Let us look at Exhibit 362, sheet 4. This purports to be a showing of casualties to passengers and employees on passenger trains, doesn't it?

A. Yes.

Q. Now, on sheet 4, on April 10th you show an accident to Extra 3699 West, 40 cars, Road Foreman Newell. Was that 40-car train a passenger train?

A. No, it was a freight train.

Q. Exhibit 365 please. You show an accident on December 4th, at Indio, to Brakeman Sickler.

The Court: What page is that?

[fol. 5072] Mr. Mason: That is on the third page, your Honor.

Q: Do you recall the Form T report covering the Stickler accident?

A. Yes, sir.

Q. It is a fact, is it not, that the Form T report doesn't contain any indication of slack action?

A. It says, from investigation it was determined that there was no unusual slack action of the train. It doesn't say just exactly—that is about the words at the bottom of the detail, that they claim there was no unusual slack action of the train.

Q. Doesn't the testimony of the crew indicate that there was no slack action?

Mr. Strouss: Just a moment—

Mr. Mason: You have it.

Mr. Strouss: Now, as I explained this morning, as soon as the typing is completed on those, they will be put in evidence.

The Court: If the witness cares to answer the question, he may do so.

Mr. Strouss: Quoting the statement at the bottom of the form T is not correct. I don't want the witness to be im-[fol. 5073] posed on by a statement of that sort.

Mr. Mason: If he doesn't want to agree, he doesn't have to.

The Court: Go ahead.

A. Not knowing exactly how the report reads, I couldn't say what it does state.

Mr. Mason: Now, Exhibit 367. First of all, Mr. Hardwicke, isn't the title of 367 a little bit erroneous. You don't include all of the Salt Lake Division, do you?

A. We intended to include all the accidents occurring on the Salt Lake Division in Nevada on the Southern Pacific of which we had form T reports.

The Court: Well, the Salt Lake Division actually extends to Ogden, Utah, doesn't it?

A. Yes.

The Court: So, this should read: "Salt Lake Division operations in the State of Nevada?"

A. Yes.

Mr. Mason: Does it include any accidents on other divisions other than the Salt Lake Division. You know the Sacramento Division runs into Nevada for a short distance?

A. Well, the way we got the information on these accidents, we received photostatic copies of all the Nevada [fol. 5074] accidents occurring in those years.

Mr. Strouss: I think the witness is confused. This is the year 1940.

The Witness: Oh, 1940. These are the reports that we recently received from Mr. Mason here to check for the year 1940.

The Court: Well, does this include the accidents on the portion of the Sacramento Division which is in the state of Nevada?

A. It should include all occurring within the state of Nevada regardless of what the division was.

Mr. Mason: Then it really should be in the heading, "Southern Pacific Company, Pacific Lines, State of Nevada?"

A. Yes.

Mr. Strouss: Let me interrupt. If that is what the Form T's that counsel tendered to us cover, that is what we have.

The Witness: These were Form T's rendered by the Salt Lake Division in the State of Nevada, that was the reason for that heading.

Mr. Booth: Mr. Sullivan advises me that you were furnished with all Form T's in the state of Nevada regardless of the division. If there were any accidents west of the [fol. 5075] point where the Sacramento Division runs in Nevada, they are in there.

Mr. Strouss: The Form T's that were given to us by counsel for defendant for Nevada were the source of this exhibit.

The Witness: That is right, and it was considered that they were the Salt Lake Division because not knowing the exact location of the Salt Lake Division, with the exception of Sparks to Ogden.

Mr. Strouss: I think probably the exhibit should be changed to show the state of Nevada upon the statement of counsel. I will say this, that my understanding of the Form T's that were given us was that they covered only the Salt Lake Division. I did want to have all covering the state of Nevada, but all we received seemed to be on the Salt Lake Division.

Mr. Booth: There may have been no accidents on the Sacramento Division.

Mr. Mason: There was one on the Sacramento Division of a passenger train.

The Court: You are asking that the title of Exhibit 367 be changed to State of Nevada?

Mr. Strouss: Yes.

Mr. Mason: That will be 367.

[fol. 5076] Mr. Strouss: Yes, and 367A.

Mr. Mason: 367A will be the same way.

The Court: That correction may be made.

Mr. Mason: Now, I notice that again we find the Form T report covering the accident at Valley Pass on December 10th, is that one of those that has been removed from the file for copying?

Mr. Strouss: Yes.

Mr. Mason: Then I will have to defer cross-examination on that and on the other one that I asked about until we can have those here. There is a question I would like to

ask you, though, about Exhibit 367 A. Exhibit 367A is casualties to passengers and passenger employees. It contains only five entries. Have you it there, Mr. Hardwicke?

A. Yes, sir, I have it.

Q. Now, look at that accident on January 14 between Deeth and Elko. Do you know whether or not that was a Western Pacific passenger train?

A. I am pretty sure it is, because of the train number. However, the accident was reported by the Southern Pacific in their Form T's, but train 39, I think, is a Western Pacific train.

Q. That is the westbound Western Pacific train, isn't it? [fol. 5077] A. It is.

Q. This accident was reported by the Southern Pacific Company because it occurred on the Southern Pacific rails on paired track territory?

A. I think that seems to be the system of reporting. We never had any Western Pacific reports, but all accidents of that nature in your reports are signed by the superintendent of the Southern Pacific Company on Salt Lake division, and it may have been on account of the paired-track movement on Southern Pacific rails.

Q. This is not an accident, however, on a Southern Pacific train?

A. Well, in comparing what the train numbers are, I wouldn't take it to be.

Mr. Mason: I will say for the information of counsel, that the accident on February 25th at Verdi apparently occurred on the Sacramento division, because that is west of Lawton.

Mr. Strouss: This passenger train operation, if counsel states that was a Western Pacific train—

Mr. Mason: Yes, Train 39 is a Western Pacific train. The timetable will so show, and show it to be a Western Pacific train on our rails.

Mr. Strouss: If that is the situation, we are willing that [fol. 5078] the record should show it.

Mr. Mason: On Exhibit 369, Mr. Hardwicke, you show there on March 16th two accidents, one to train 43, in which a passenger, Mrs. Richard Sharp, suffered 45 days' disability, alleged sudden stop of train; another one Consolidated 5 and 43, Mrs. Walker, seven days' disability, alleged jerk

of train. Is there any reason why one but not both of those accidents should not be starred?

A. No, I think they should both be starred. However, "alleged" is a funny word. The only thing was, one of them occurred between Bridge 947.11 and Dock, Arizona, No. 43, with 12 cars, and somewhere between Dock and Phoenix after consolidation of No. 5 and 43, with 26 cars, Mrs. Walker alleged jerk of train, complained of severe pain in head, arms, and right leg, so either of them should be starred a slack action accident, and if in any way—sometimes it might not have been admitted there was any rough handling of train, it may have been proved by investigation that there was no rough handling of the train.

Q. You call them slack action accidents, Mr. Hardwicke, but as a matter of fact, there is nothing on the face of the [fol. 5079] report to indicate slack action or anything other than a sudden stop or jerk, is there?

A. Well, a lurch or jerk, sudden stop.

Q. But there is no indication of slack, is there?

A. No, not in the first one, alleged stop of train might have been an emergency stop, and the force of the stop probably would throw somebody down.

Q. Mr. Hardwicke, you have ridden in street cars from time to time, haven't you?

A. A few times, yes.

Q. You have had them stop suddenly, haven't you, to avoid a collision or something of the kind?

A. Not exactly that, but I have had them stop rather abruptly.

Q. And when there is a sudden stop, the passenger, if he happens to be standing, may suffer a severe jerk, may he not?

A. Well, not to the extent that you would from an emergency stop of a passenger train, because it is quite a bit more severe and violent than a streetcar would be, one unit.

Q. It is the same character of stop?

A. Yes, but there is only one unit to be considered. In a [fol. 5080] passenger train there might be from ten to fourteen or fifteen. I imagine that the air brake equipment on a passenger train is much faster and quicker than than on a streetcar.

Q. Virtually simultaneous, isn't it, throughout the train?

A. I wouldn't say it works simultaneously, sometimes it takes hold all at the same time.

Mr. Mason: Well, subject to one or two questions, I think that is all I have, the form T reports being missing.

The Court: Will they be available this afternoon?

Mr. Strouss: We will bring what have been copied over.

The Court: The court will be at recess then until two o'clock.

Mr. Mason: Yesterday afternoon, Mr. Sines was served with a subpoena duces tecum to bring to court certain form 2611 reports in connection with two accidents on the Los Angeles division, both occurring during 1940. Now, the form 2611 reports have been referred to here previously, and your Honor may recall that they are the forms upon which employees make their statements with respect to accidents which have occurred in their presence or of which [fol. 5081] they have some knowledge. These form 2611 reports, which are the subject of the subpoena, if they ever were in Tucson, of which I am not certain, were not in Tucson or in the possession of Mr. Sines when the subpoena was served. They are not in Tucson or the state of Arizona today, consequently, the subpoena cannot be complied with. I am submitting for your information a copy of form 2611, so that the nature of the report will be clear. Now, the authorities are uniform, I haven't found any opposing authority, that a report of that kind cannot be demanded under Rule 34, or its production compelled; that it is not admissible in evidence as an admission of the defendant, that it is not material evidence on behalf of the defendant. Consequently, we believe not only is the subpoena duces tecum ineffective because the documents are not in the state of Arizona and subject to its process, but, furthermore, if they were, we couldn't be compelled by this device to have them in court for the use of the other side, because they are not subject to such an order to produce. I can furnish the authorities. I have quoted them already.

Mr. Strouss: We have Arizona authorities which seem [fol. 5082] to be out of the line of uniformity which Mr. Mason refers to. There is at least one Arizona case which holds that reports of an employee—that happened to be a railroad company in that instance, a foreman, as to cattle injured on the highway, that they are admissible in evidence against the railroad company as an admission, as an exception to the rule of hearsay evidence.

The Court: Is the general rule otherwise, Mr. Strouss?

Mr. Strouss: No, I don't think the general rule is otherwise. I have authority to sustain our position on that. Now, we have subpoenaed this form 2611 and we have in our motion to produce the production of form 2611 in the instance of these two accidents, we have limited it to the two accidents; one of them was referred to by Mr. Mason this morning as the Sickler, to which I objected that the statements were not as shown on the form T. I think when we bring in the form T it will show that the statement by the superintendent was that the statements of members of the crew indicated that there was no unusual handling of the train. In other words, form T on its face shows that it is purely a conclusion of the superintendent as to what the statements of the employees who were on the train [fol. 5083] and there at the time of the accident indicate. Now, these are the statements which we are asking for as to the employees on that train, so that we may have the best evidence as to what the employees did state was the cause of that accident. Now, if the 2611's indicate, as the superintendent has indicated, on the form T, I don't see why counsel should object to them being brought in if they sustain his statement that there is no indication of any unusual handling.

Mr. Mason: We object on several grounds. We object because our forms 2611 are not subject, whether they sustain the point is beside the question, we object that the motion is not properly taken and the subpoena properly issued, first, because they are beyond the jurisdiction of the State, second, because they are immaterial, and third,—and this is because counsel has announced his purpose—because counsel is endeavoring by this means to impeach his own showing. It will be recalled these form T reports are in evidence as Plaintiff's exhibits, form T reports for the Los Angeles division for 1940, and those are the only ones involved in this request, are plaintiff's own exhibits. It is elementary, the plaintiff cannot impeach his own showing.

[fol. 5084] Mr. Strouss: That is rather a strange argument. We have contended at different times during the course of this case that the form T's are merely the statement of the defendant as to their views of these things, and should not be binding on the State, and we have introduced

the evidence here of one witness whom we were able to produce here, and his evidence did show that the matter set up in the Form T did not correctly state the actual facts in connection with this accident, and that was the witness from California, the witness Hausman. Now, his testimony as to his accident and as to the injuries checked against that form T will show that the form T did not give a correct statement of either the nature of the accident or the injuries. The form T, as I remember it, and it is in evidence, shows that his disability was probably thirty or sixty days, when, as a matter of fact, he has never been able to go back to work since he was injured in 1937. Now, we have a right to show the method that they use in making these reports, and your Honor will remember the piece that I read from the accident bulletin of 1939, in which the Interstate Commerce Commission took notice of that very fact, that there was some indications of failures on [fol. 5085] the part of the carriers to correctly report and to report all of these reportable accidents.

The Court: Mr. Strauss, what have you to say as to the first objection that the reports, this form 2611, are not actually within the state?

Mr. Strauss: Well, the parties are before the Court and they can certainly be ordered to bring them in.

Mr. Mason: That is just a motion to produce again, which has already been denied.

Mr. Booth: There is another fundamental objection to bringing in these forms 2611. That is, the counsel makes the demand based on the assumption that the superintendent used those forms in making his form T's. Now, there isn't a word of evidence in here that he uses those. He may use it, it is true, but there may be other surrounding circumstances, there may be other forms of evidence, there may be an investigation which is always had in the case of serious accidents, by way of questions and answers; that he relies on in making his Form T. If the Interstate Commerce Commission intended that the employees should make the form T's and intended the carriers to follow the statements of interested parties, there might be suits against some of them, we are asked to give plaintiff evidence [fol. 5086] that might be material to him in that case, evidence of other witnesses; I don't know but what

it will be handed over to this Legal Aid Bureau that the B of R. T. maintain, but aside from that, there is no connection in the record or in the rules of the Interstate Commerce Commission or in the practices of the railroad, no necessary connection between form 2611, which is an ex parte statement by an employee to the superintendent, and the superintendent's own version of the accident. That is the fundamental objection, its lack of causation there.

The Court: If this were a damage action, it might be different. Unless there is an Arizona case squarely in point, I would certainly deny the request to produce form 2611, because I cannot believe that the defendant company would be bound by any such ex parte statement. Of course, this is not a damage action.

Mr. Strouss: If it were a damage action we wouldn't ask for it.

Mr. Mason: If it were a damage action the form T reports couldn't be used.

The Court: The practical effect of this request, the only purpose I can see it would serve, would be to impeach [fol. 5087] the form T reports.

Mr. Strouss: To show the method in which they are made and the underlying data. This form T, and the one we are particularly interested in is the one covering this Sickler accident, Mr. Booth says there is nothing to show that the superintendent did rely on these reports. The form T itself states that the statements of members of the crew indicate that there was no unusual handling of the train. Certainly, that statement shows that they looked to the form 2611 for the statements of the crew as to what was the cause of this accident.

Mr. Booth: Not necessarily. They may have looked to the statements of the crew during an investigation by question and answer before the superintendent.

The Court: Of course, it seems to me that the Court must look as to where this would lead us. The Interstate Commerce Commission requires certain reports. Apparently, those reports are the form T reports with reference to these casualties. Now, is this Court going behind those form T reports from which—that is, all the statistics practically offered by both the State and defendant have been taken [fol. 5088] from the form T reports submitted to the Inter-

state Commerce Commission. I think that is true. Now, are we going into an inquiry here to impeach those reports, and will this Court be required to determine whether those form T reports have been correctly made, whether those were the true facts in connection with a given accident?

Mr. Strouss: That is not what we are asking. We have this right, however, to put in whatever evidence bears upon the question, not for the purpose of the Court determining whether the form T is correct or incorrect, but to give all the evidence upon any factor.

The Court: Wouldn't the best proof on that, Mr. Strouss, if a question arises as to a given accident, to produce as you did in the case of Hausman, the eye witnesses or one of the train crew, and examine him.

Mr. Strouss: That would be fine, but they are not in the state of Arizona.

Mr. Mason: We will give them free transportation to come to Tucson if you want them.

The Court: Wouldn't opposing counsel be entitled to cross-examine this witness whose ex parte statements you are seeking to offer, seeking to have produced?

[fol. 5089] Mr. Strouss: I think your Honor will find it is an exception to the hearsay rule with respect to reports made by employees.

The Court: Well, if the counsel will furnish me with a memorandum, not a brief on it, but just your authorities on it, I will go into it.

Mr. Strouss: Your Honor has said that our evidence has mostly been based upon Interstate Commerce Commission statistics. That is probably true, but because of this necessity, we don't have access to these; we asked for these form 2611's before this case came to trial, and of course were refused them. We can only put in what we have been given access to.

The Court: If counsel for both sides will submit a little memorandum of your authorities.

Mr. Mason: That is the memorandum I have submitted. I think it covers this point as well, although inferentially and not directly.

(Thereupon, the court stood at recess until April 29, 1941, until two o'clock P. M.)

[fol. 5090]

2 P. M., April 29, 1941.

All parties being present as heretofore noted, proceedings were resumed as follows:

The Court: You may proceed. Do you have further cross-examination of this witness?

Mr. Mason: Only when those two form T reports become available.

The Court: Then you may step aside, Mr. Hardwicke.

Mr. Strouss: Aside from the form T's and the questions on these exhibits we are resting.

The Court: In other words, Mr. Strouss, the State has now finished its rebuttal except for the Court's ruling on your demand to produce the forms 2611 and the objections which were made to the introduction of these exhibits Nos. 206, 329 to 333, and 371 to 381?

Mr. Strouss: That is correct, and the placing in evidence of the form T's upon which the 1940 accident exhibits were based.

The Court: Aren't they in evidence as yet?

Mr. Strouss: No, they are the ones which we are having copied.

The Court: You will have those ready by tomorrow morning, I presume?

Mr. Strouss: I am not sure that we can have them ready [fol. 5091] for tomorrow morning. They are being typed but we had to wire Washington for form T's in order to make these so it delayed us in getting started on them.

The Court: You have no objection, Mr. Mason, to proceeding with your surrebuttal?

Mr. Mason: None at all.

The Court: Very well, you may call your first witness.

Defendant's Surrebuttal

JOHN J. SULLIVAN was called as a witness in behalf of the defendant and having been previously sworn testified as follows:

Direct examination.

By Mr. Mason:

Q. Mr. Sullivan, have you prepared certain additional exhibits either supplementing or replacing portions of exhibits already introduced?

A. I have.

Q. I show you a sheet identified as defendant's exhibit No. 274, Witness Sullivan, Sheet 13. Will you state what this sheet purports to be?

[fol. 5092] A. Sheet 13 is a continuation of exhibit No. 274 previously introduced in twelve sheets which ended with the year 1939 and sheet 13 now is the same detail or in similar form for the year 1940.

Q. Was the sheet now before you marked No. 274, sheet 13, prepared from the form T reports?

A. It was.

Q. For the year 1940?

A. Yes, sir.

Q. This is simply a showing of the detail of these particular accidents in the same fashion as on No. 274, the first twelve sheets already introduced?

A. That is correct.

Mr. Mason: Have you any questions, Mr. Strouss?

Mr. Strouss: I notice you have at the bottom of this, "Caused from sudden stopping, starting, lurch, or jerk of car or train." Where did you get your information in indicating that?

A. From the character of the accident as indicated by the detail and the narrative on accident report form T.

Q. This is your opinion?

A. That is correct.

Mr. Mason:

[fol. 5093] Q. This is predicated entirely on the form T, is it?

A. That is correct.

Q. Not on the forms 2611?

A. No, I didn't examine any forms 2611.

Mr. Mason: We offer the sheet which has been identified in the record as sheet 13 of exhibit No. 274, offering it in that fashion in order that the entire story for the state of Arizona may be in one exhibit.

The Court: You are asking that it bear the same number?

Mr. Mason: It is now numbered in the same way.

The Court: Any objection, Mr. Strouss?

Mr. Strouss: I will make the same objection to the slack action being a conclusion to be consistent here.

The Court: The objection is overruled, it may be admitted in evidence as a supplement to exhibit No. 274.

Mr. Mason: May we have it, your Honor, as an integral part of exhibit No. 274?

The Court: As an integral part of exhibit No. 274.

Mr. Strouss: May I ask if this is based upon the same form T reports that were given to us for examination? Do you know, Mr. Sullivan?

[fol. 5094] A. Yes, they were. You will notice in the title of the exhibit it is confined as was exhibit No. 274 originally to employees on duty in road freight train operation. You had many additional form T's not shown on this exhibit because they covered injuries to trespassers, covered non-train accidents, grade crossing accidents, passenger train and other classes of service, but you were furnished with copies of the form T's covering accidents as shown on sheet 13 of exhibit No. 274.

Mr. Mason:

Q. Have you before you a single sheet bearing identification as defendant's exhibit No. 275, sheet 8?

A. I have.

Q. Is this an additional sheet for the year 1940 covering the state of Nevada and bringing down to date exhibit No. 275 for the state of Nevada?

A. It is.

Q. And bears the same relation to exhibit No. 275 already introduced that sheet 13 of exhibit No. 274 does to that exhibit?

A. That is correct.

Q. Was this likewise predicated or based upon form T reports for the state of Nevada?

A. It was.

[fol. 5095] Q. Have those form T reports been supplied to plaintiff's counsel for their examination and use?

A. They have.

Mr. Mason: We offer the sheet in evidence as sheet 8 of exhibit No. 275 asking that it be made an integral part of that exhibit in order to bring it down to date?

The Court: The same objection I presume?

Mr. Strouss: Yes.

The Court: Objection overruled. It may be admitted in evidence as an integral part of exhibit No. 275.

Mr. Strouss: The slack action here is the same, it is your conclusion?

A. That is correct, although I would like to qualify that, I haven't referred to slack action in any of my exhibits.

Q. The jerk and lurch of train and so forth?

A. That is correct.

[fol. 5096] Mr. Mason: Have you before you, Mr. Sullivan, an exhibit in one sheet bearing the title, "Defendant's Exhibit No. 276?"

A. I have.

Q. I call your attention to the fact that there is already in evidence an exhibit 276, which appears to contain a showing for the years 1923 to 1939 inclusive. What is the difference between that and the sheet now before you?

A. The sheet before me for the years 1923 to 1939 is the same as exhibit 276 previously introduced. The exhibit before me now has included therein the figures for the year 1940.

Q. Have you made any recomputations of the totals for the six-year period 1935 to 1940 inclusive?

A. Yes, the total for 1935-1940 has been recalculated, as well as the casualty rates shown in columns J and K.

Q. And line 22 is the total for 18 years instead of 17?

A. Yes, sir, that is correct.

Q. This brings down to date Exhibit No. 276 in evidence?

A. Yes, sir.

Q. Based on the form T's?

[fol. 5097] A. Yes, sir.

Mr. Mason: Your Honor, we would like to substitute the sheet which the witness has just discussed in lieu of Exhibit 276 already in evidence, and ask that the other be withdrawn and destroyed, and that this be substituted in its place.

Mr. Strouss: We do make the same objection as made to the original exhibit.

The Court: The objection is overruled, and there may be substituted the exhibit just offered as No. 276 in lieu of the original exhibit.

Mr. Mason: Your Honor will recall that we did this same thing when the 1939 statistics became available for national and system showing.

Q. Now, have you a sheet, Mr. Sullivan, bearing the title, "Defendant's Exhibit No. 277?"

A. I have.

Q. And I will ask you if this is likewise intended as a substitute for Exhibit 277 in the same way that you have substituted the same sheet for the exhibit previously discussed as Exhibit 276?

A. It is.

Q. Prepared in the same way?

A. Yes, sir.

[fol. 5098] Q. Recalculated in the same manner?

A. Yes, exactly the same.

Q. This includes the year 1940?

A. Yes, sir.

Q. And other years as previously shown?

A. Yes, sir.

Mr. Mason: May we have this sheet accepted in lieu of Exhibit 277 in the same way as we did for No. 276?

Mr. Strouss: The same objections as made to the original.

The Court: The objection is overruled. It may be received in evidence and substituted in lieu of the original Exhibit 277.

Mr. Mason: Have you before you, Mr. Sullivan, an exhibit 279, which contains the showing for the year 1940?

A. Yes.

Q. And bearing the same title as the original exhibit 279 except for the reference to the years 1923 to 1940?

A. That is correct.

Q. Is this an exhibit likewise prepared in the same way as exhibits 276 and 277?

A. It was.

Mr. Mason: Have you any objections?

[fol. 5099] Mr. Strouss: No, the same objections as to the original.

Mr. Mason: We ask that the document marked 279, and carrying the showing down to the year 1940, be substituted for the original exhibit 279?

The Court: The objection is overruled. It may be substituted.

Mr. Mason: Mr. Sullivan, have you a sheet bearing the title, "Exhibit 280?"

A. I have.

Q. Was this prepared in the same fashion as Exhibit 279?

A. It was.

Q. And the same title except for the reference to the year 1940?

A. It is.

Q. I have neglected to ask you, but I will now ask you, have the calculations on this exhibit and on the preceding exhibits to which you have just referred, been checked and determined as to whether they are true and correct?

A. They have been.

Q. Will you state whether or not they are true and correct?

A. They are.

[fol. 5100] Mr. Mason: Your Honor, we ask that this exhibit bearing the number 280 be substituted for the original exhibit 280, and that the other exhibits be regarded as withdrawn, subject, of course, to the original objection.

Mr. Strouss: The same objection that I made to the original.

The Court: The objection is overruled, and the substitution may be made.

Mr. Mason: Have you before you, Mr. Sullivan, a single sheet entitled, "Defendant's Exhibit No. 286"?

A. I have.

Q. Bearing the same title as the exhibit originally introduced as Exhibit 286, except as to the reference to the year 1940?

A. Yes, sir.

Q. Will you say whether this exhibit is likewise a bringing down to date of the information which you attempted originally to show on Exhibit 286?

A. It is.

Q. And have the calculations been checked?

A. They have been.

Q. Will you say whether the exhibit is true and correct?

[fol. 5101] A. It is.

Q. Predicated on the same original sources?

A. Yes, sir.

Mr. Mason: We ask that the sheet be received in place of the original Exhibit No. 286.

Mr. Strouss: The same objections as to the original exhibit.

Mr. Mason: I think there were no objections to this one.

The Court: My record shows no objection to Exhibit 286. The substitution may be made and this new exhibit, including the 1940 figures may be admitted in evidence.

Mr. Mason: Have you exhibit No. 287, Mr. Sullivan, which is similar to Exhibit 286 just received, but relates to the state of Nevada?

A. I have.

Q. And replacing the original exhibit 287?

A. It does.

Q. By adding the year 1940?

A. It does.

Q. Has this exhibit been checked to determine its correctness?

A. It has been.

Q. Will you say whether the exhibit is true and correct?
[fol. 5102] A. It is.

Mr. Mason: Subject to whatever objection may have been made to the original exhibit, we offer the sheet in place of the original exhibit 287.

The Court: Subject to the same objections, which were overruled, the substitution may be made.

Mr. Mason: Mr. Sullivan, have you before you a sheet entitled, "Exhibit No. 288," and which bears a title similar to that of the original exhibit 288 except that it refers to 1940?

A. I have.

Q. Is this likewise a bringing down to date of the original exhibit 288?

A. It is.

Q. And is it true and correct?

A. It is.

Mr. Mason: Your Honor will note that this is the comparison of the two states, which was undertaken originally on Exhibit 288 and is otherwise simply a bringing down to date. We offer it in evidence to replace the original exhibit 288.

Mr. Strouss: I am quite sure there were objections. We make the same objections.

The Court: Subject to the same objections, which were overruled, and the substitution may be made, and the exhibit [fol. 5103] is admitted in evidence as No. 288.

Mr. Mason: Mr. Sullivan, have you prepared a single sheet bearing the title, "Exhibit No. 289, Sheet 13," and bearing in the center of the page, "Detail of Train Accidents, Road Freight Train Operation, Reported to the Interstate Commerce Commission, State of Arizona?"

A. I have.

Q. Is this intended as a supplement and continuation of Exhibit No. 289, composed of twelve sheets?

A. It is.

Q. This is simply a showing for 1940 not heretofore presented?

A. Yes.

Q. Based upon the form T reports entirely?

A. Yes, sir.

Mr. Mason: Your Honor, we offer this in evidence as sheet 13 of Exhibit 289, and ask that it be received as an integral part of that exhibit.

Mr. Strouss: No objection. I don't have my exhibit here. This was damage to equipment?

The Witness: Yes, train accidents, and it would include—well, the original exhibit included casualties when there were any, and train accidents.

[fol. 5104] The Court: Damages over \$150?

A. That is correct.

The Court: Any objection to this?

Mr. Strouss: No objection.

The Court: It may be admitted as Sheet 13 of Exhibit 289, and become an integral part thereof.

Mr. Mason: Have you before you, Mr. Sullivan, a single sheet entitled, "Defendant's Exhibit No. 290, Sheet 10," being similar to the sheet just received as sheet 13 to exhibit 289, except that it relates to the state of Nevada?

A. Yes, sir.

Q. This being the sheet for the year 1940; is it not?

A. It is.

Mr. Mason: Your Honor, we ask that this sheet be received as sheet 10 of Exhibit 290 and become an integral

part of that exhibit, subject to whatever objection may have been made originally to Exhibit 290.

The Court: Subject to the same objections, which were overruled, this may be admitted as sheet 10 of Exhibit 290, and become an integral part thereof.

Mr. Mason: Mr. Sullivan, I ask you to turn now to an exhibit [fol. 5105] consisting of 16 sheets, the title sheet of which bears the following title, "Comparisons of Casualties to Employees on Duty and Non-Trespassers, Road Freight Train Operation, Sustained in Train and Train Service Accidents, reported to the Interstate Commerce Commission, Years 1930 to 1940, Inclusive, Southern Pacific Company (Pacific Lines) Los Angeles Division." Have you that exhibit at hand?

A. I have.

Mr. Mason: May we have this marked for identification, your Honor, with the next number?

The Clerk: Defendant's Exhibit No. 386 for identification.

The Court: Now, just a moment. Exhibit 386 originally offered was withdrawn, so I take it you will use the same number for this exhibit?

Mr. Mason: Yes, I think for all intents and purposes Exhibit 386, offered by the plaintiff, doesn't exist.

The Court: That is right. Very well, it may be marked for identification. You had finished with all the substitutions and additions?

Mr. Mason: Yes, I think these are now all new exhibits. [fol. 5106] Mr. Mason: Mr. Sullivan, before taking up sheets 1, 2, and 3 of exhibit No. 386 for identification I will ask you to turn to sheet 4 and sheets 4 to 16, inclusive. Will you state what those sheets consist of?

A. The sheets show for each year from 1930 to 1940 the detail of all reportable casualties, all classes of persons except trespassers in train and train service accidents in road freight train operation for the Los Angeles division.

Q. Does this exclude all yard accidents?

A. It does.

Q. Does this exclude all passenger train accidents unless a freight train was involved?

A. It does.

Q. Does it specifically include grade crossing accidents where freight trains were involved?

A. It does.

Q. What is the source of the information shown in the detail of sheets 4 to 16, inclusive?

A. The retained file copies of the form T's made to the Interstate Commerce Commission.

Q. Is the information in columns A to J, inclusive, taken from those form T's?

A. All except column C.

Q. From what source do you get that information in [fol. 5107] column C?

A. From the official records of the company as to whether or not the location is on a main line or a branch line of the Los Angeles division.

Q. Where do you get the information in column K, "Description of Accident"?

A. That is a brief description of the accident ordinarily as it appears in the description briefly on the form T and supplemented when necessary by the detail on the form T.

Q. That is item 26 as to the detail where it is not shown on the upper part of the form T?

A. Both items 17 and 26.

Q. I notice that in certain of these cases, for example on line 1 and again in line 11 you do not show the name of the individual?

A. That is correct.

Q. You simply show it as "occupant of a motor car" or whatever it may be?

A. That is correct.

Q. Will you return to sheet 1. What is the source of the information shown in columns B and C on sheet 1?

A. They are from the official records, freight train miles and freight car miles maintained in the Office of the Auditor [fol. 5108] of Equipment Service Accounts of the company.

Q. Has information of this character, if you know, been furnished to opposing counsel?

A. It has been. I don't believe these particular figures have been furnished but the same type of statistics has been furnished.

Q. As to the information in column D, what is the source of that?

A. Those are calculations made by me by dividing the car-miles in column C by the train-miles shown in column B.

Q. Did you make any calculation of the total number of casualties shown to the various classes of persons, employees and others by years and by periods of years?

A. I have.

Q. Where does that appear?

A. On sheet 2 of the exhibit.

Q. These figures, for example in columns B, C, and D on sheet 2 of the exhibit, from what source do you get those?

A. It is a summarization of the detail shown for the respective years on sheets 4 to 16 of the exhibit.

Q. Then summed up by six-year periods?

A. Six and five-years periods.

[fol. 5109] Q. Have you followed that same method in obtaining each of these yearly totals and totals for periods on all of the columns on sheet 2?

A. I have.

Q. Returning to sheet 1 again, what is the basis of the figures for example in column E on sheet 1?

A. Column E is a calculation by me, using the train-mile figure shown in column B and relating it against the absolute figure shown for the same year on sheet 2 for the particular class of persons.

Q. For example, to get the figure shown in column E opposite the year 1930, you would make a computation of the figure shown in column D of the year 1930 on sheet 2 against the total train-miles?

A. Yes, divide column B, which shows the figure 19 by the train-miles shown on sheet 1 of the exhibit.

Q. Are these various rates shown on each of the other columns E to T, inclusive, calculated in the same way by taking the appropriate divisor and dividend?

A. That is correct. For instance, E to K, I used column B as a basis and columns M to T, inclusive, the car-[fol. 5110] miles shown in column C as the measuring stick.

Q. Have these calculation all been checked?

A. Yes, they have all been checked by me.

Q. Were they made mechanically by a calculating machine?

A. They were.

Q. Turning to sheet 3, will you state what you have done in preparing that?

A. Sheet 3 as in the case of the preceding sheet has for its basis a detail shown on sheets 4 to 16, inclusive, and there has been a segregation of the absolute figure shown on sheet 2 for the various classes of employees and persons as to trains of 70 cars or less and trains of over 70 cars.

Q. Where do you get the information to enable you to classify them as between long trains and short trains?

A. The form T shows the number of cars in the train and you will notice that that information has been inscribed on sheets 4 to 16 in column F of the exhibit.

Q. I take it, then, that the aggregation or summation of these is your own calculation by periods and by years?

A. That is correct.

[fol. 5111] Q. Have all of these calculations been checked and compared to determine their correctness?

A. They have been.

Q. Will you say whether or not the exhibit to the best of your knowledge and belief is true and correct as far as the calculations are concerned?

A. It is.

Q. It is a true and correct reflection of the underlying sources?

A. It is.

Mr. Mason: Have you any questions, Mr. Strouss?

Mr. Strouss: Yes. Mr. Sullivan, these casualties shown on pages 2 and 3, that would include all types of casualties I take it?

A. Except trespassers and involving only road freight train operation.

Q. I mean the nature of the accident would not affect the matter of including the accident?

A. No, if it was a reportable injury it would be included.

Q. If it was a collision or whatever it was?

A. That is correct, train and train service accidents.

Q. Your exhibit nowhere shows the number of trains of over 70 cars which were operated during this period during [fol. 5112] each of these years and the number of trains of 70 cars or less?

A. No, there were no records maintained from which that information could be obtained.

Mr. Booth: What would be necessary to ascertain that fact?

A. A special study.

Mr. Booth: Of what?

A. Of all the available wheel reports.

Mr. Booth: That has not been made?

A. No.

Mr. Mason: Has your Honor any questions?

The Court: I think not.

Mr. Mason: We offer the exhibit in evidence as defendant's exhibit No. 386.

Mr. Strouss: We have no objection to pages 4 to 16, inclusive, but we do object to that part of the exhibit, pages 1 to 3, inclusive, as incompetent, irrelevant and immaterial.

Mr. Mason: I will ask you, Mr. Strouss, if you are basing any part of that objection on our failure to supply you with the basic records of the train-miles and car-miles?

Mr. Strouss: No.

Mr. Mason: Because we could make that available.

[fol. 5113] Mr. Strouss: No.

The Court: The objection is overruled, it may be admitted in evidence.

(The document referred to was received in evidence and marked "Defendant's Exhibit No. 386.")

Mr. Mason:

Q. Mr. Sullivan, I will ask you to take now an exhibit of nine sheets entitled, "Comparisons of Casualties to Employees and Non-Trespassers, Road Freight Train Operation, Sustained in Train and Train Service Accidents Reported to the Interstate Commerce Commission, Years 1930 to 1940, Inclusive, Southern Pacific Company, Pacific Lines, State of New Mexico." Have you that statement before you?

A. I have.

Mr. Mason: Your Honor, we will ask that this be marked for identification as defendant's exhibit No. 387.

The Court: It may be marked.

The Clerk: Defendant's exhibit No. 387 for identification.

Mr. Mason:

Q. Did you prepare exhibit No. 387, Mr. Sullivan.

A. I did.

Q. Will you state the sources of the underlying information, [fol. 5114] excluding the showing of freight train-miles and freight train car-miles?

A. The sources of sheets 5 to 9, inclusive, were the photostatic copies of the form T accident reports that were introduced by the plaintiff, as exhibit No. —.

Q. (Interrupting) They are the New Mexico form T reports that were introduced by the plaintiff?

A. That is correct.

Q. You used those same form T reports to obtain the information on sheets 5 to 9, inclusive?

A. Insofar as they pertain to road freight train operation that is correct.

Q. The information on sheets 5 to 9, inclusive, is taken directly from the form T reports?

A. Yes, sir.

Q. What about the description of accidents shown in column J on those sheets?

A. That is a brief description of the accident as shown in item 17 and in item 26 of the narrative of the form T reports.

Q. I notice in some instances you show here instead of the name of the person injured simply "non-trespasser."

A. That is correct, a person injured without disclosing the individual's name. Only the names of employees are [fol. 5115] shown on the exhibit.

Q. Does this exhibit undertake to show for the state of New Mexico and for the period indicated the same information and the same type of comparisons as are shown on exhibit No. 386?

A. It does.

Q. Was it prepared in the same way?

A. It was.

Q. What is the source of the information of the freight train miles and freight train car miles in columns B and C on sheet 1?

A. That was obtained from the annual reports of the company to the New Mexico Corporation Commission.

Q. Have those annual reports likewise been made available to the plaintiff?

A. I believe they have. They are available in Tucson anyway now.

Mr. Strouss: I don't think they have. I might ask are those reports the same as the reports which were filed—this is 1940?

Mr. Mason: Yes.

Mr. Strouss: Those are the reports which you gave us?

A. Yes, except I don't believe you have had the year 1940 but it is now available. It has just been filed a week or [fol. 5116] so ago.

Mr. Mason:

Q. These calculations were made in the same way that you explained in connection with exhibit No. 386?

A. They were.

Q. What about the showing on sheet 3 where you segregate between trains of 70 cars and less and trains of over 70 cars? Was that taken directly from an examination of column F or from the form T reports which are the sources of information shown in column F?

A. In column E of this exhibit.

Q. I notice on this exhibit you have a showing of the casualties to road freight conductors, brakemen and flagmen aggregated by years and by periods caused by sudden stopping, starting, lurch, or jerk of train. Will you refer to sheet 4, please?

A. I have it before me.

Q. Just what was done in preparation of sheet 4?

A. Before we discuss that I would like to call attention to item 116 on sheet 8 where I inadvertently showed the accident as due to sudden stopping, starting, lurch, or jerk of car or train.

Q. That is the accident at Vaughn, New Mexico?

[fol. 5117] A. The double cross should be eliminated.

Q. The accident to conductor Dolan was not as you understand it a slack action accident?

A. The form T does not indicate that it was. Returning to sheet 4—

Mr. Mason: (Interrupting) Your Honor, may we have it understood that the exhibit, if received, will be corrected by eliminating the indication of sudden stopping, starting, and so forth, as to item 116 on sheet 8?

The Court: Yes, the record may show the change.

The Witness: Sheet 4 of the exhibit has been prepared by examining the detail sheets both as to trains of 70 cars

and less and over 70 cars and preparing a table for years of the number of casualties which reports indicate were due to sudden stopping, starting, lurch, or jerk of train. Then comparisons of the rates based on train-miles and car-miles have been calculated as shown in columns E and F. Totals and average casualty rates have been calculated and shown for the six years, 1930 to 1935, likewise for the five years, 1936 to 1940, and then comparisons one period with the other and one period with the average for the eleven years shown at the bottom of the exhibit.

[fol. 5118] Mr. Mason:

Q. I notice that you show the number of casualties per million train-miles and per hundred million car-miles. Were those casualty rates shown in columns E and F obtained by dividing the total as shown in column D by the train-miles and car-miles?

A. The figures shown in columns E and F, respectively, on sheet 4 have been calculated by dividing the total shown in column D on sheet 4 by the train-miles in column B and car-miles in column C on sheet 1, respectively.

Q. You obtained these rates in the same way that you obtained rates elsewhere in the exhibit?

A. Yes, sir.

Mr. Mason: Have you any questions, Mr. Strouss?

Mr. Strouss: The same questions that were asked concerning exhibit No. 386 if asked of you, Mr. Sullivan, as applied to this exhibit, your answers would be the same?

A. I don't just recall what those questions were.

Mr. Strouss: I just asked you two, I think, the accidents which are included here are not segregated as to character, they include all accidents of whatever character?

[fol. 5119] A. They include all train and train service accidents, that is correct.

Q. There is nothing in this exhibit to show the number of trains of over 70 cars or the number of trains of 70 cars or under which were operated over the entire period or at any time during the period?

A. No.

Q. These form T's, just as a matter of information, I think we have the form T's for 1940 and I take it those are the ones filed with the New Mexico Corporation Commission?

A. No, they were the ones filed with the Interstate Commerce Commission, the form T's. The annual reports covering the train-miles and car-miles were filed with the New Mexico Corporation Commission.

Q. May I ask a question on the previous exhibit, the form T's which were furnished us by the Southern Pacific Company covering the years 1930 to 1939 and which are now in evidence as exhibits No. 352 to No. 361, those are the form T's from which your exhibit No. 386 was prepared?

A. No, it is not my recollection that we furnished you any New Mexico reports.

Mr. Strouss: I mean Los Angeles.
[fol. 5120] A. I beg your pardon, yes, they were the same ones, that is insofar as they pertain to road freight train operation.

The Court: Mr. Sullivan, supplementing Mr. Strouss's question with reference to sheet 3, I believe you stated there was nothing in this exhibit to disclose what percentage of the trains had more than 70 cars or what percentage had less than 70?

A. Your Honor, I understood his question to be whether or not there was any place in this exhibit that showed the total number of trains operated with 70 cars or less and those of over 70 cars and I said that information was not available.

The Court: I notice on page 1 of this same exhibit that in column D it does give the average cars per train over this period from 1930 to 1940, inclusive, making the grand over-all average of 55.19. I take it from that figure that the bulk of the train operations in the state of New Mexico were under 70 cars?

A. I understand that to be a fact, yes, sir.

The Court: In other words, the state of New Mexico is not a typical long-train-operation state?

A. It is not.

The Court: But the state of Nevada, I believe from the [fol. 5121] previous testimony, is a typical long-train-operation state?

A. It is a predominantly long-train-operation state, yes, sir, that is correct.

Mr. Mason: Your Honor will recall there is in evidence an exhibit containing a train count made in New Mexico

during 1939, I think four typical months, and indicating the percentage of trains of more than 70 cars and less.

The Court: I don't recall what the exhibit number is, but Mr. Sines can find it for us.

Mr. Mason:

Q. Will you state again what is the source of the figures in column D on sheet 1?

A. Column D is a calculated average obtained by dividing the total car-miles shown in column C by the train-miles shown in column B.

Q. That is all of the car-miles made in all lengths of trains?

A. Of freight trains regardless of their length.

Q. The divisor is all train-miles made by all trains whether long or short?

A. That is right, that is in freight trains.

Q. This is then merely a statistical average or quotient of the two?

A. That is correct, and you will notice that it fluctuates [fol. 5122] from year to year on that account.

Mr. Mason: Has your Honor any further questions?

The Court: No.

Mr. Mason: We offer the exhibit in evidence as defendant's exhibit No. 387.

Mr. Strouss: We have no objection to sheets 5 to 9 of the exhibit but we do object to sheets 1 to 4, inclusive, as incompetent, irrelevant, and immaterial.

The Court: The objection is overruled, it may be admitted in evidence.

(The document referred to was received in evidence and marked "Defendant's Exhibit No. 387.")

Mr. Strouss: For the record I will say that the objection as based on incompetency is not because the basic records are not here.

Mr. Mason: Your Honor, the exhibit which shows the train count for New Mexico and elsewhere on the system is exhibit No. 185.

The Court: Thank you.

Mr. Mason:

Q. Referring back to this average cars per train as shown on exhibit No. 387, is there any particular part of that showing in column D that you wish to call attention to?

A. Nothing except it will be noticed by an examination of [fol. 5123] the figures in the column that the average length per train in 1930 has increased from 52.11 cars per train to an average of 65.38 in the year 1940. The average for the eleven years is 55.19, practically ten cars less than it was for the year 1940.

Q. Is that all that you have on exhibit No. 387?

A. Yes.

Q. Will you take up, please, an exhibit in 7 sheets entitled, "Train Accidents Reported to the Interstate Commerce Commission, Years 1930 to 1940, Inclusive, Southern Pacific Company, Pacific Lines, State of New Mexico." May we have this marked for identification as defendant's exhibit No. 388?

The Court: It may be marked.

The Clerk: Defendant's exhibit No. 388 for identification.

Mr. Mason:

Q. Turning first to sheet 1, columns B and C, will you state whether or not the source of the information of train-miles and car-miles in those columns is the same as on exhibit No. 387?

A. It is.

Q. They are the same figures here reproduced, are they? [fol. 5124] A. Yes, sir.

Q. As to sheets 4, 5, 6, and 7, from what source did you take the information shown on those?

A. The source was the photostatic copies of the Southern Pacific form T's which were introduced by the plaintiff for the years 1930 to 1939 and the retained file copies of the company of the form T's to the Interstate Commerce Commission for the year 1940.

Q. Do you show in sheets 4 to 7, inclusive, every case in which a person was injured in a train accident in the state of New Mexico as covered by the exhibit?

A. If there were any.

Q. Will you state whether or not there were any?

A. There was one casualty and that was sustained by a brakeman, referring to item 111, sheet 7 of the exhibit, on June 7, 1940, in a derailment in New Mexico just east of Cavot, Arizona, at milepost 1127, involving a 60-car train when eight cars were derailed on account of broken flange, the 18th car from the engine, the injured brakeman riding the 19th car at the time of the accident.

Q. Was the information as to the various classes of accidents which are shown on sheet 1, columns D to R, [fol. 5125] inclusive, taken from the information shown on sheets 4 to 7, inclusive?

A. Yes.

Q. You made the classification according to the class in which each of the accidents fell as indicated by the detail, did you?

A. Yes, and that detail is specifically shown by the same classification on the form T. In other words, if it is a derailment, it is indicated on the form T as a derailment, likewise a collision, a locomotive accident, or a miscellaneous train accident, respectively.

Q. Those are the four major classes?

A. Yes, sir.

Q. You have made the summation and obtained these rates by division, have you?

A. I have.

Q. The mathematical processes being as you have previously described?

A. That is correct.

Q. Turning to sheet 2, how did you make the classification shown there?

A. That is a summarization from the detail shown on sheets 4 to 7, inclusive, selecting for each class of accident those that occurred on trains of 70 cars or less and those [fol. 5126] on trains of over 70 cars and at the foot of sheet 2 is a further summarization as to the causes of the various accidents as shown in column L of the various sheets from sheet 4 to 7.

Q. Is this segregation in the lower block on sheet 2 predicated directly on what appears in the detail on sheets 4 to 7?

A. That is correct.

Q. This represents simply a summation?

A. That is correct.

Q. What as to sheet 3, what have you done in preparing that?

A. Sheet 3 is a summary by lengths of trains of that type of train accident classified as a derailment and those which were due to defects in or failures of freight car equipment shown for trains of 70 cars or less and those for trains of over 70 cars.

Q. Is this detail all available in sheets 4 to 7, inclusive?

A. It is.

Q. It is a further breakdown of derailments which are shown to be due to defects in or failures of freight car equipment?

A. That is correct.

Q. And excludes derailments due to defects in roadbed [fol. 5127] or locomotive failures?

A. That is correct.

Q. The calculations are correct?

A. Yes, sir.

Q. Will you say whether or not the computations and the balance of the showing on the exhibit are correct to the best of your knowledge and belief?

A. They are.

Mr. Mason: Have you any questions, Mr. Strouss?

Mr. Strouss: It is a rather lengthy exhibit and difficult to run over in a minute. How does the material which appears on pages 4 to 7 differ from that on the previous exhibit, sheets 4 to 7?

A. Possibly I can make this clear by stating that this showing is exactly the same as the exhibit reflecting the train accidents occurring in the state of Nevada and another exhibit showing the detail of the train accidents in the state of Arizona.

Mr. Mason: Those are exhibit Nos. 286 and 287, I think, which were supplemented this morning.

The Witness: My recollection is they are exhibits Nos. 289 and 290.

Mr. Mason: Yes, that is correct, Nos. 289 and 290.

[fol. 5128] Mr. Strouss: No. 387, sheets 5 to 9, gives a detailed description of accidents in New Mexico?

A. No. 387 is confined entirely to casualties and whether they are train service accidents or train accidents. Exhibit No. 388 for identification is confined entirely to train

accidents and necessarily does not involve casualties. In other words, exhibit No. 387 is a casualty showing and No. 388 is a train accident showing.

The Court: You might well have a train accident without the necessity of a casualty?

A. That is correct, your Honor. As will be observed, there are 120 items representing 120 train accidents in New Mexico and in only one was there a reportable casualty.

The Court: We will take our mid-afternoon recess at this time.

(Thereupon the court took a short recess after which proceedings were resumed as follows:)

[fol. 5129] The Court: You may proceed.

The Witness Sullivan was recalled to the stand, and proceedings were resumed as follows:

Mr. Mason: Your Honor, I was just about to offer in evidence, subject to any questions which you may have, the exhibit previously identified as No. 388.

Mr. Strouss: Objected to as irrelevant and immaterial.

The Court: The objection is overruled. It may be admitted.

(The document referred to was received in evidence and marked, "Defendant's Exhibit No. 388.")

Mr. Mason: Mr. Sullivan, have you before you a statement in a single sheet, entitled, "Comparison of Number and Accident Rate per Million Freight-train Miles and Per One Hundred Million Freight Train Car-Miles, Derailments Due to Defects in or Failures of Freight-car Equipment, New Mexico, Arizona, and Nevada, 1930 to 1940, Inclusive," and so forth?

A. Yes, sir.

Mr. Mason: May we have this statement marked No. 389 for identification?

The Court: It may be marked.

[fol. 5130] The Clerk: Defendant's Exhibit No. 389 for identification.

Mr. Mason: Mr. Sullivan, there are certain blanks both in the title and in the headlines in the various blocks. Will you indicate how those should be filled?

A. In the title, the second line from the bottom, there should be inserted the figure 388, so that it will read "As reflected in Exhibit No. 388 covering New Mexico," and in the table in column B over the name of the state of New Mexico, in each of the three subdivisions the figures 388 should be inserted so that columns B, E and H will indicate information appearing on Exhibit 388.

Q. Mr. Sullivan, how did you prepare No. 389?

A. The figures as to the number of derailments, the absolute number in B, C, and D, was abstracted from Exhibits 388, 286, and 287, for the respective years. The number of derailments due to defects and failures of equipment, as shown by those exhibits, likewise the accident rate on a train-mile basis, columns E, F, G, were abstracted from Exhibits 388, 286 and 287, respectively, likewise, the accident rate on a car-mile basis was abstracted from exhibit [fol. 5131] 388, 286 and 287, showing that information.

Q. I take it, then, you have simply brought together here in one place figures which already appear of record in the three several exhibits shown in the title?

A. That is correct, except for the totals for 1930 to 1935, and the totals 1936 to 1940, and the grand total 1930 to 1940, have been calculated because Exhibits 286 and 287 also included the years 1923 to 1929 inclusive, and those figures were not available on Exhibit 388.

Q. This relates only to the last eleven years, 1930 to 1940 inclusive?

A. That is correct.

Q. All of the underlying totals for each year will be found on the other exhibits?

A. That is correct.

Q. You simply brought together then, in one place, and then totaled up the necessary information?

A. Yes, and made some calculations where it was necessary.

Q. For example, as to the New Mexico showing, is that the showing which will be found on sheet 3 of Exhibit 388 in columns R, S and T?

A. That is correct.

Q. Now you say train-mile basis and car-mile basis. Do [fol. 5132] I understand by that that these are the rates

per million train-miles or hundred million car-miles, as the case may be?

A. That is correct, as indicated in the title of the exhibit.

Mr. Mason: Have you any questions, Mr. Strouss?

Mr. Strouss: No questions.

Mr. Mason: Your Honor?

The Court: No.

Mr. Mason: We offer the exhibit in evidence as Exhibit No. 389.

Mr. Strouss: Objected to as irrelevant and immaterial.

The Court: Objection overruled. It may be admitted.

(The document referred to was received in evidence and marked, "Defendant's Exhibit 389.")

Mr. Mason: Mr. Sullivan, have you before you a statement in one sheet bearing the title, "Train Accidents, Showing Classes and Causes, Class One Railroads of the United States, Reflected by Statistics of the Interstate Commerce Commission, Years 1923 to 1939 Inclusive"?

A. I have.

Mr. Mason: May we have this marked for identification, [fol. 5133] your Honor, No. 390?

The Court: It may be marked.

The Clerk: Defendant's Exhibit No. 390 for identification.

Mr. Mason: Did you prepare Exhibit No. 390, Mr. Sullivan?

A. I did.

Q. And I take it the sources are as shown in the note at the foot of the large sheet?

A. They are.

Q. You refer to the various tables of the Accident Bulletins in detail there?

A. I have.

Q. Is all this information taken directly from or calculated from figures which appear in the annual Accident Bulletins for the years shown?

A. The basic figures are shown in the Accident Bulletins, the calculations are shown and computed by myself.

Q. Are these various headings as to cause the headings of the Interstate Commerce Commission or of yourself?

A. They are the headings of the Interstate Commerce Commission.

Q. For example, let us look at column E, does this figure for the year 1923 under column E reproduce a figure already set forth by the Interstate Commerce Commission in an Accident Bulletin?

A. It does.

Q. And is the same true as to these other segregations as to cause?

A. That is correct, for each type of train accidents.

The Court: I notice that the year 1940 is not included here. I take it that is because the data is not available.

A. That is correct: 1939 just became available a few months ago.

The Court: The 1940 figures which have been reproduced here heretofore in evidence, have been the figures of the Southern Pacific Company alone?

A. That is true, and then of the various states.

Mr. Mason: Have you made any prior national showing similar to Exhibit 390, Mr. Sullivan?

A. There has been a train accident showing on the basis of all railroads in the United States, but there has been no comparison or relative comparisons of one type of accident with another, or one cause of accident with another.

Q. And, as I understand it, your prior showing is not [fol. 5135] inclusive of 1939?

A. That is correct, it stopped with 1938.

Q. This was prepared since the 1939 figures became available?

A. That is correct.

Q. Will you say whether or not the calculations have been checked to determine whether they are true and correct?

A. They have been.

Q. Have the original figures, the duplication of the figures appearing in the I. C. C. reports, and likewise appearing in the underlying Accident Bulletin tables been checked?

A. They have been.

Q. Is the exhibit true to the best of your knowledge?

A. It is.

Mr. Mason: Have you any questions, Mr. Strouss?

Mr. Strouss: No.

Mr. Mason: Your Honor?

The Court: No.

Mr. Mason: We offer the exhibit in evidence as No. 390.

Mr. Strouss: It is objected to, first, as not proper surrebuttal. There was no evidence of this sort introduced [fol. 5136] on rebuttal; and, second, it is incompetent, irrelevant and immaterial.

The Court: As to the last ground, it is overruled. I will hear you on the first objection.

Mr. Mason: Surrebuttal, your Honor?

The Court: Yes.

Mr. Mason: Well, I can think of several reasons why this should be received. In the first place, there has been considerable testimony here by the opposition as to the possibilities of accidents due to various kinds of defects, particularly train accidents, and other types of accidents due to defects in or failures of equipment, or defects in or improper maintenance of way and structures. It was mostly oral testimony and not related to any known basis. This exhibit shows throughout the years the importance of the various causes of those types of train accidents in relation to all the causes to which they may be assigned. It is explanatory on a statistical basis of what the witnesses testified to, limiting their own testimony, I realize, to a relatively local situation, but this shows a national picture of that kind. It is explanatory, in other words, of testimony as to which only statistical information will suffice. In the second place, it must be realized that our defense [fol. 5137] is to some extent equitable in character. Our affirmative defense asks for a declaration that the law is unconstitutional and therefore unenforceable, and where an equitable defense is presented, it is incumbent upon the Court, it seems to us, to have before it such relevant information as became available while the case is in progress. The comparison for the year 1939 was certainly not available when we presented our case previously; is that correct, Mr. Sullivan?

A. That is correct.

Mr. Mason: As to the material prior to 1939, this could have been presented at that time, but we would have been presented with the necessity of bringing this information down to date of 1939. Your Honor will recall particularly,

returning to the first branch of this discussion, that the witness Cooper testified rather generally not only as to what happened in Arizona, but he indicated a general familiarity with train operation, and it was, I presume, intended to relate that general familiarity to the particular issues in this case, although Mr. Cooper had never operated on the Southern Pacific in Arizona.

Mr. Strouss: Mr. Cooper's testimony was limited, of [fol. 5138] course, to brake equipment. There was nothing of this type testified to by Mr. Cooper, and no other witness that I know of on behalf of the State. So far as being an equitable proceeding, this is a case at law, and, of course, upon that theory they might save their whole case in chief for surrebuttal, and we would have no chance to answer at all. There is certainly nothing to such a proposition as that.

The Court: I think this is on the borderline, but I am going to overrule the objection.

(The document referred to was received in evidence and marked, "Defendant's Exhibit No. 390.")

Mr. Mason: Have you before you, Mr. Sullivan, a statement in a single sheet entitled, "Southern Pacific Company (Pacific Lines), All Train Accidents," and so forth, years, 1923 to 1939, inclusive; state of Arizona?

A. I have.

Q. Is this exhibit similar in form to No. 390?

A. It is.

Q. Will you state from what sources this exhibit was prepared, Mr. Sullivan?

A. It is a summarization of the detailed data shown on Exhibit 289.

[fol. 5139] Q. Is it simply a bringing together in one place of the detail shown in Exhibit 289?

A. It is, except for the year 1940, which had not been collected and gathered together when Exhibit 391 for identification was compiled.

Q. What as to the calculation of rates? Is that based on figures already in evidence?

A. They are.

Q. Do I understand then that this is simply a bringing together in one place and a calculation of rates based upon testimony already of record?

A. That is correct.

Q. Is there any new material on exhibit 391 that is not already of record or capable of calculation?

A. Only the calculated rates are new. All the basic material is already in evidence.

Q. The calculation could have been made by counsel in writing a brief, if necessary, couldn't it?

A. That is correct.

Q. Have you checked these calculations to determine whether they are correct?

A. I have.

Q. Will you say whether the exhibit is true and correct to the best of your knowledge?

[fol. 5140] A. It is.

Mr. Mason: Has your Honor any questions?

The Court: No.

Mr. Mason: We offer the exhibit in evidence as No. 391.

Mr. Strauss: The same objections as to the previous exhibits.

The Court: The objection is overruled. It may be admitted.

(The document referred to was received in evidence and marked, "Defendant's Exhibit No. 391.")

The Court: Mr. Sullivan, you say that this data as shown on Exhibit 391 is merely bringing down to date the data already in evidence. You referred to a certain exhibit. What was the number of that?

A. 289 as to the basic data. 289, however, did not include, your Honor, the freight train locomotive-miles or total freight train-miles and freight train car-miles, but included the basic figures from which the number of accidents in the absolute was obtained.

The Court: But all the data herein contained except 1940 is already in evidence in some exhibit or other?

A. That is correct.

[fol. 5141] Mr. Mason: Your Honor, I call your attention to the fact that 391 does not include 1940. It is a calculation for the years preceding 1940.

Q. Have you before you, Mr. Sullivan, a statement in one sheet similar in form and title to 391, but related to the state of Nevada?

A. I have.

Mr. Mason: May we have this statement marked No. 392 for identification?

The Court: It may be marked.

The Clerk: Defendant's Exhibit No. 392 for identification.

Mr. Mason: Did you prepare No. 392, Mr. Sullivan?

A. I did.

Q. Will you state the sources from which it was prepared?

A. The sources as to the number of accidents by classes in their absolute number was obtained from Exhibit 290 already in evidence.

Q. What is the source of the freight train locomotive-miles, train-miles, and car-miles in columns B, C, and D?

A. They were obtained from exhibits already in evidence.

Q. There are a number of exhibits showing the car-miles, [fol. 5142] locomotive miles, and train-miles in the state of Nevada as well as in Arizona. 276, for example, shows the locomotive-miles.

A. In each case, columns B, C and D, although shown on exhibits, were obtained from the annual reports of the company to the Corporation Commission—the Nevada Public Service Commission.

Q. Then, do I understand that this exhibit is simply a bringing together in one place of figures which already appear of record?

A. That is correct.

Q. And represents a summation and calculation of rates?

A. That is right.

Q. Have you checked the calculations?

A. Yes, sir.

Q. Have you checked the exhibits against the underlying sources?

A. I have.

Q. Will you say whether or not it is true and correct?

A. It is.

Mr. Mason: We offer this in evidence. Subject to questions by opposing counsel and Court, we offer this in evidence.

Mr. Strouss: I have no questions. It is objected to as not [fol. 5143] proper surrebuttal, incompetent, irrelevant and immaterial.

The Court: Objection is overruled. It may be admitted.

(The document referred to was received in evidence and marked "Defendant's Exhibit No. 392.")

Mr. Mason: Mr. Sullivan, you recall the testimony of the witness Ash to the effect that on September 7, 1925, he had used the conductor's valve in order to stop a train which was backing into the Tucson terminal?

A. I recall that testimony.

Q. It will be found at page 4760 of the record. Did you make any investigation to determine whether Engineer F. E. Riley, to whom Mr. Ash referred, was shown by the records of the company as having lost any time following September 7, 1925?

A. I did.

Q. Will your state of what your investigation consisted?

Mr. Strouss: Objected to as incompetent, irrelevant and immaterial, hearsay, and not the best evidence.

The Court: Well, no, I will overrule the objection to this question. If he is going to refer to any documents, of course, he will have to do so, but this was as to the investigation [fol. 5144] that he made. Overrule the objection.

A. I have in the courtroom the original time records which show the services performed by Engineer Riley during the period immediately following the accident. I also have in my possession an original document signed by the superintendent whose signature I know personally, which was prepared at the time, and indicates that Engineer Riley lost no time on account of the accident.

Mr. Strouss: I move that that be stricken.

The Court: The last portion, which indicates what the report shows, may be stricken.

Mr. Mason: I will show you, Mr. Sullivan, and also to opposing counsel, form 5513, Southern Pacific Company, Pacific Lines, Superintendent's Statement of accident to employees. Is that one of the original records to which you refer?

A. Yes, sir.

Q. Do you know the signature on that form?

A. Yes, sir.

Q. Whose signature appears on that form?

A. L. U. Morris, Superintendent.

Q. Was Mr. Morris superintendent of the Tucson Division in 1925?

A. Of the Rio Grande division.

[fol. 5145] Q. What does the report show as to whether Mr. Riley lost any time?

Mr. Strouss: Now, I object to that. If they want to put the report in, I have no objection.

The Court: I will sustain the objection to the question.

Mr. Strouss: I don't object to having it copied in.

Mr. Mason: Do I understand that counsel say they have no objection to having the report copied in?

Mr. Strouss: No. No objection. We think your record is good evidence.

Mr. Mason: There is considerable difference, I take it, in our using our own records as evidence and being compelled to bring in something as a demand against interest.

The Court: This is not form 2611?

Mr. Mason: No, decidedly not. There is a vast difference between this and form 2611. It is not a form T report either.

The Court: Go ahead.

Mr. Strouss: We have no objection to it being read into the record, or copied in.

Mr. Mason: Have you made an investigation of the original time records, Mr. Sullivan?

[fol. 5146] A. I have.

Q. Do you know whether the time records are permanent records which the company keeps?

A. The engineer's individual time return is not, but the time record of enginemen and trainmen is.

Q. Is that a permanent record required under order of the Interstate Commerce Commission?

A. I don't recall as to the specific requirement of that order. This is a time book for 1925, and it is now available.

Q. Will you show it to opposing counsel, please?

(The witness hands the time book to Mr. Strouss.)

Q. In your experience with the company, Mr. Sullivan are you familiar with the time records?

A. Yes, at one time I was a timekeeper.

Q. Can you state, from an examination of the time record of a particular individual, whether or not he has served on particular days?

A. Yes, his time return is maintained according to the data on which the service was performed.

Q. And will the time return as transcribed into the time record indicate the various days during the particular month in which he served?

A. It will, and the miles of service that he performed.

[fol. 5147] Q. Now, is the record which you have shown to opposing counsel the permanent record of Engineer F. E. Riley's service during 1925?

A. I opened the page that carries the time of Engineer Riley.

Q. Does it carry the time of Engineer Riley during the month of September, 1925.

A. It does.

Q. And referring to the time record, which you have shown to opposing counsel, will you say whether or not Engineer Riley is indicated as having been in active employment during the days immediately following September 7, 1925?

Mr. Strauss: Now, I object to that as incompetent, irrelevant and immaterial, and calling for a conclusion and not the best evidence. Now, if the Court please, this report, apparently counsel is not going to put it in. I want to ask the Court that counsel be directed to have that report here for cross-examination, because we will ask to have it read into the record if counsel does not. We have no objection to the showing—I don't think it is material. My recollection of Mr. Ash's testimony is that he made no statement as to whether this man was disabled so that he was off duty or [fol. 5148] not. He said he lost some teeth, but I don't remember if testifying to the fact that the man lost any time. For that matter, I think the time record is immaterial, but I think now certainly that this report has been brought in here, we have a right to have that for use on cross-examination of this witness, who was questioned concerning it.

The Court: Well, we will cross that bridge when we get to it.

Mr. Strauss: I don't want it now sent back to California and then have them come in and say it is beyond the jurisdiction of this Court.

Mr. Mason: Here is what Mr. Ash said—

The Court: It is my recollection that he said, when pinned down, whatever party was injured, implied that he did lose time, that he must have lost time on account of losing his teeth.

Mr. Mason: He said here, page 4785, "I couldn't say how long he was off, but he was off several days."

Mr. Strouss: You didn't make this record, did you, Mr. Sullivan?

A. No, I did not.

Q. And anything you testified to from this is your conclusion of what you see on the page?

A. It would be what I would read from the record, that is correct.

[fol. 5149] Mr. Mason: The objection was made that this is incompetent. Of course the original record was produced and the witness has shown his familiarity as a timekeeper with this character of record and is competent to testify from it.

The Court: The objection is overruled.

Mr. Mason: I think the question is whether the witness can say from the record whether the engineer Riley was on duty during the ten days immediately following September 7, 1925?

A. Time return on enginemen and trainmen, form 1973, for the month of September, 1925, shows that on the seventh day of the month engineer Riley performed service on engine 3691 from Tucson to Douglas, 124 miles; on the tenth on engine 1011 he rendered service from Douglas to Bisbee Junction and return to Douglas for which he was allowed 100 miles; on the twelfth of the month he rendered service on engine 4301 from Douglas to Tucson, 124 miles; on September 13th, on engine 3300 from Tucson to Douglas, 124 miles; on the fifteenth on engine 3314 from Douglas to Tucson, 124 miles; on the sixteenth on engine 3693 from Tucson to Douglas, 124 miles. All as an engineer and these were the ten days immediately following the date of the accident.

[fol. 5150] Q. Mr. Sullivan, you were a division officer on the Tucson division at one time?

A. Yes, I was trainmaster.

Q. Also on the Shasta division?

A. Yes, sir, I was trainmaster and assistant superintendent on the Shasta division.

Q. On the Salt Lake division?

A. Assistant superintendent on the Salt Lake division.

Q. On the Western division?

A. Assistant superintendent on the Western division.

Q. Did you ever ride on freight trains while you were a division officer on those divisions?

A. Yes, sir.

Q. Where did you ride?

A. Usually in the caboose; occasionally on the engine or out on the train.

Q. Did you pick those trains which you would ride according to the length?

A. No.

Q. Was it possible to make any selection according to length on the Salt Lake division, for example?

Mr. Strouss: I object to that as immaterial, whether he [fol. 5151] selected these trains according to length.

Mr. Mason: Mr. Fail testified to that—

Mr. Strouss (Interrupting): These men never testified whether these men selected the trains.

The Court: The witness made the general broad statement that these division officers kept off these long freight trains.

Mr. Strouss: On the trains where he was working, that is all he testified to.

Mr. Mason: I take it counsel are willing to stipulate except on the Lordsburg-El Paso district that division officers do ride on all kinds of trains.

Mr. Strouss: I won't stipulate any such thing. They put their evidence on in the case in chief as to these other places where they wanted to have testimony as to whether they rode on the rear or middle.

The Court: Yes, that is true.

Mr. Strouss: The only thing that was testified to by the witnesses for the State was as to officials on the division where these men work, whether they rode on the rear end of the train on these divisions.

The Court: Now that you have refreshed the Court's mind as to that testimony, I am inclined to agree with you. [fol. 5152] Mr. Strouss. Unless you limit the direct exami-

nation here to matters that would directly contradict the evidence heretofore offered by the State, the objection will be sustained.

Mr. Strouss: I move to strike the answer to the question.

The Court: It may be stricken as to what occurred on these other divisions.

Mr. Mason: Your Honor, I take it it is all right to pursue this line of inquiry as to the Tucson division or does your objection go to the Tucson division?

Mr. Polley: Mr. Fail's testimony was confined by counsel to his own experience and that is all he testified to, that the officials hadn't ridden his trains.

The Court: No, I think it went further than that. The Court will permit you to examine this witness as to the Tucson-Rio Grande division because my recollection is that the witnesses for the State did cover those two territories.

Mr. Mason:

Q. Have you ever ridden freight trains on the Rio Grande division, Mr. Sullivan?

A. I have not.

Q. Have you ridden them on the Tucson division?

A. I have.

[fol. 5153] Q. What part of the division?

A. Between Tucson and Yuma.

Q. Did you make any selection of those trains according to length?

A. I did not.

Q. Were you present in the courtroom when reference was made to various humps or hogbacks or sags in the alignment of the right of way between Yuma and El Paso by various witnesses?

A. I was.

Q. Do you recall that one or two witnesses referred to a hump at Pronto, New Mexico?

A. I recall that.

Q. Also at Ligurta?

A. Yes, sir.

Q. At Chamiso, Arizona?

A. Yes, sir.

Q. And at Smurr, Arizona?

A. Yes, sir.

Q. Do you recall testimony somewhat to the effect that at those places there were run-ins or run-outs of the train on account of slack action?

A. That is correct.

Q. Have you made an investigation of the reported and reportable casualties to trainmen on freight trains in the [fol. 5154] States of New Mexico and Arizona?

A. I have examined the exhibits which are already in evidence showing casualties to trainmen in those states.

Q. From that examination will you say whether or not there appears to have been any casualty due to slack action or assigned to that cause occurring at Liguria?

A. I could locate none.

Q. At Chamiso?

A. None.

Q. At Smurr?

A. None.

Q. At Pronto?

A. None.

Mr. Mason: I think that is all.

Cross-examination.

By Mr. Strauss:

Q. Mr. Sullivan, in connection with the testimony of Mr. Ash as to the injury to engineer Riley there was a report, or this report by the superintendent covers that accident?

A. It is a report making a recommendation for an allowance, yes, sir.

Q. It explains the injuries that occurred to Mr. Riley, [fol. 5155] doesn't it?

A. I don't think it covers all of the details of the accident except it indicates that he was injured.

Mr. Strauss: I ask that this report be put into the record. I would like to show the nature of it and I think the Court will remember there was testimony concerning an injury to Mr. Riley and whatever the testimony was concerning the time lost, Mr. Mason read it. I think this report of the superintendent should be permitted to be read into the record.

Mr. Booth: It can be copied in.

The Court: You may proceed with it.

Mr. Strouss: It is five minutes of four and I would like to have the evening; I don't know as I will have many questions from Mr. Sullivan.

The Court: The Court will give you that right, there have been a lot of exhibits offered here. You are asking that the sheet which you have just handed to the Court—

Mr. Strouss: Which is form 5513—

The Court (Continuing): Be copied into the record.

Mr. Strouss: Covering the superintendent's statement of accident to employe F. E. Riley on September 7, 1925, [fol. 5156] that that be copied into the record.

The Court: It is so ordered.

Form 5513

Southern Pacific Company—Pacific System

Superintendent's Statement of Accident to Employe

(This form to be used in all cases in which a superintendent refers to the claims attorney an injured employe's claim, or appeal, for assistance from the Southern Pacific.)

Name (in full)—F. E. Riley (Engineer).

Place of Injury—Tucson Yard, Arizona.

Date of Injury—September 7, 1925.

Cause of Injury to Employe: Whose fault:—Extra 3655 West was backing into yard at Tucson, when Conductor opened emergency valve causing sudden stop which threw Engineer F. E. Riley against cab of engine, knocking out three front teeth.

Nature and Extent of Injury—Three front teeth knocked out.

Present Physical Condition—Good.

Length of Disability—None.

Total Loss in Wages—None.

Daily Wage—\$7.70.

[fol. 5157] Number of Working Days per Week—7.

Financial Condition, Pecuniary Resources, Insurance, Etc.—No income other than salary. Group insurance only.

Those Dependent Upon Him—Wife.

Number of Years in Service—18 years.

Character of Service and Record—Good.

Superintendent's Recommendations as to what should be done—Recommend that Engineer F. E. Riley be allowed

\$60.00 to cover cost of dental work necessary account of this accident, as no signals were passed and he had no warning that Conductor was going to open emergency valve. Bill of Dr. Lewis R. Brown, Douglas, Ariz., attached.

L. U. Morris, Superintendent.

Mr. Strouss: We will reserve further cross-examination until morning.

Mr. Mason: We have been served with a hand-written memorandum of certain authorities upon which counsel proposes to rely in connection with exhibit No. 206 and forms 2611.

The Court: Would counsel like to be heard on that matter now? I intend to go into the library with your authorities here.

[fol. 5158] Mr. Strouss: I am a little tired but I can do that.

The Court: We might save time if it won't be an imposition to have you do that. If you prefer to wait, I will not insist upon it.

Mr. Strouss: I did not intend to argue it in detail in any event but I think I can give the Court in brief our points as to the law upon these exhibits and our citations and I don't see any point in taking half an hour or an hour to argue it anyhow. On this exhibit No. 206 which is the report of Johnson on the air brake test, our belief and contention is that that exhibit is admissible first as independent evidence and an exception to the hearsay rule and, second, as an admission of a representative of the defendant and therefore an exception to the hearsay rule.

Now upon the first ground that the evidence is admissible as independent evidence. I think the Court will find from the authorities that it is quite generally held that tests made by a disinterested party and not for the purpose of trial and not influenced by any party to the trial are admissible in evidence. A case very much in point upon this question and particularly with respect to the evidence which is before [fol. 5159] the Court or which is offered is the case of *Lyons vs. Northern Pacific Company*, a Montana case, reported in 117 Pacific at page 81. That was a case in which an engineer brought an action against the company for personal injury, and part of the defense was that the accident was due to the negligence of the engineer, that with the brake equipment

on the engine and train he could have stopped the train before it collided with another train which caused the accident. As part of the evidence, tables of the Westinghouse Air Brake Company, a test made of this type of brake equipment, was offered in evidence and the same objection here made was made in that case, and the Court there, in sustaining the admission as an exception to the hearsay rule, pointed out the admissibility of this type of evidence. There is in the case quite a lengthy discussion of the theory.

Another case is *Western Assurance Company vs. J. H. Möhlman Company*, 83 Federal, 811, where the tables of the Bureau of Forestry and similar tables of *Kent's Mechanical Engineer's Pocketbook* and *Johnson's Strains in Frame Structures*, or tables taken from these different books, were offered and received in evidence to show the crushing [fol. 5160] strength of certain timbers and the Circuit Court of Appeals in that case gives quite a lengthy discussion of the admissibility of evidence of this sort.

In the case of *McLaughlin vs. Terrell Bros.*, a Texas case, 179 Southwestern, 932, the *American Railway Equipment Register* was admitted in evidence to show the capacity of freight cars.

In *Leas vs. Continental Fruit Express*, 99 Southwestern, 859, the rules of the Master Car Builders of America were held admissible to show the proper construction of hand irons.

I do not have the title of this case, 46 Northeastern, at page 61, but records of a horsemen's association were held admissible to show the speed of a race-horse.

In 2 Southwestern Second, at 505, the *Standard Baseball Guide* was held admissible to show the opening days of the baseball season.

In 20 Northwestern, at 860, a *Catechism of a Locomotive*, that is a textbook, was held admissible in a case where the safety and repair of a locomotive was involved.

In this case we have this situation so far as ~~the record~~ here is concerned and the showing of the tests that were [fol. 5161] made, first, that the Master Car Builders in 1911 was succeeded by the American Railway Association in 1919, I believe it was, and that in turn by the American Association of Railways in 1934. In each instance these, or in the last two instances they have been organized by the Class I railways. Among its functions and purposes was

that of prescribing the specifications of air brakes. That was true not only with respect to the A. R. A. but with its predecessor, the Master Car Builders, and with its present successor, the A. A. R. The testimony shows that in prescribing those specifications and arriving at what those specifications would be, it was the function and purpose of both the A. R. A. and the A. A. R. to make tests and investigations to determine what the specifications should be. Those tests and investigations were made as a basis of arriving at specifications which would govern the interchange of cars and the brake equipment on those cars. The evidence shows that these tests were made beginning with the year 1924 under an order of the Interstate Commerce Commission in this instance and were terminated in 1932 when this report was made. In 1933, the following year, the specifications were prescribed by the then American Rail- [fol. 5162] way Association, which are the same specifications now a part of the rules of interchange. In other words, at all times it has been one of the functions and purposes, representing the Class I railways, to carry out these tests in order to prescribe the specifications. There cannot be any question but that the evidence shows that these tests were not in any way made for the purpose of this trial, and there couldn't be any evidence that the plaintiff, State of Arizona, in any way influenced the tests, so it meets all the requirements of the rule which these cases I have cited lay down. Then, of course, we further say that aside from the matter of independent evidence, the record here does show that the A. R. A. and the A. A. R. is the representative of this defendant, as well as all other member railroads of the Association. Upon this ground we have to confess a little bit of surprise when the objection was made by counsel in view of the statement of counsel at the time this evidence was identified, when the exhibit was given to Mr. Browning. Reading from page 2928 of the transcript, I handed the exhibit to Mr. Browning, and asked him this question: "Mr. Browning, I hand you Plaintiff's Exhibit [fol. 5163] No. 206 and ask you if that is a true and correct copy of the report made by Mr. Johnson and printed and published by the Association of American Railways. Mr. Booth: Just a moment, I don't want to put any obstacle in the way of counsel bringing any publication of the A. A. R. or any of its committees, and for that reason I don't object

to this question, but I certainly will object to any attempt on cross-examination to offer this report or any portion of it."

That statement having been made, we accepted it and made no offer at the time and permitted the witness to leave. Counsel stated the only objection they were making was as to its offer on cross-examination. But aside from that, we cite the evidence, which we have reviewed in the short time since yesterday afternoon when this matter of the agency so far as the A. A. R.—which the memo handed to us yesterday afternoon raises—that the A. A. R. and the A. R. A. are two different organizations. In reading the memorandum, I take it from the argument there made that counsel admits and certainly must admit in making this sort of argument, that the A. A. R., the present Association of American Railways; that the Southern Pacific Company is [fol. 5164] a member and that that company does represent the Southern Pacific as well as all other member railroads, but says there is no showing that that was true with respect to the American Railways Association, which was the predecessor of the Association of American Railways. Your Honor will remember that Mr. Parmelee in his testimony testified that the Association of American Railways was an amalgamation of the American Railway Association, the Bureau of Railway Economics, and a few other affiliated railway associations, and he also testified when he was testifying concerning what he, in his lecture that he gave, stated as his opinion of the reason that certain things were being done by the railroads following the war of 1914 to 1918, which was prior to the amalgamation in 1934 of the different companies into the A. A. R. He was then testifying about the period following 1918, and it was in response to my objection that he had not identified the railroads, he said it meant these railroads which were members of the Association and of the Bureau, which could only mean the American Railway Association and the Bureau of Economics, and he testified the Southern Pacific was one and had been from the beginning.

[fol. 5165] Of course your Honor will remember that the record here has shown that these rules of interchange, which is the function of the Association and any of these associations which have to do with the question of air brakes and the tests and investigations leading up to the adoption of

specifications, that their history was shown by the defendant as part of the rules which they had been governed by during all of this period from 1911 on and the testimony of Mr. Browning showed how these investigations were made as a part of the method of arriving at what the specifications would be. It is not a question, as your Honor will see from reading the decisions, as to whether the report is adopted by the principal or not if the agent makes a report in the course of his duty and I think it is clear from the record that one of the functions of these different associations from the Master Car Builders on was to make the tests and make the investigations and from that to arrive at the specifications which should govern in the rules of interchange so far as air brakes are concerned. In support of that the cases which we have cited with reference to the matter of agency, those cases are in point on that and I think [fol. 5166] I will probably have a few more that I can take off and hand to your Honor and counsel some time before dinner; I don't have them taken off now.

[fol. 5167] The Court: You are relying primarily on two things, first, it is your contention that this exhibit 206 from which all of these other exhibits were taken, I mean the excerpts from 206 were taken and are included in these Nos. 329 to 333 inclusive, and 371 to 381 inclusive, they all spring or grow out of the contents of 206, I believe.

Mr. Strouss: Yes, and no. A part of the last group are all excerpts from 206. The first group are excerpts from the Annual Report of the Association which from 1929—and that is another point—to show that the A. R. A. and the A. A. R. are practically one and the same thing because the reports which were given to us as the backlog for these exhibits that Mr. Browning put in were the annual reports right straight down through from 1929 down. Those are the excerpts from the annual reports, and I will state frankly that speech of Mr. Patterson's to 1939—

The Court: I am glad to have you confess that.

Mr. Strouss: I am not going to try to defend the admissibility of that.

The Court: What the Court started to say was, that you are relying first upon the proposition that the excerpts [fol. 5168] which are offered in evidence are independent evidence and an exception to the hearsay rule and secondly, you are relying upon this principal and agent.

Mr. Strauss: And again one of the exceptions to the hearsay rule.

The Court: Very well. The Court will hear you gentlemen.

Mr. Mason: Perhaps it would be better if we made our argument tomorrow after we have an examination of these authorities. Of course, in order to render this report independent evidence the author must be first qualified and there has been nothing here to indicate what Mr. Johnson was beyond the fact that he was director of research. The report itself may not be relied upon for that purpose even if it shows who Mr. Johnson was, which I doubt. We haven't anything here to indicate Mr. Johnson was competent to make that report as independent evidence so far as independent evidence is concerned. As the outset, there is the objection—considering the report as independent evidence that Mr. Johnson has not been qualified as being the kind of a man who could make a mortality table or a report of a baseball schedule or a report of a horse breeder association, or something like that. As to the agency question, counsel persistently confuses reports made by the association and transmitted after being made to their members with the action of the members, but the record shows that the rules are not binding upon the members until submitted to a vote and adopted, so that the agency fails right then and there. There isn't any necessary connection between the report on the one hand and the action taken by the association which binds the members. The action must be taken by the association in order to produce these interchange rules which are then binding, but until that time there is no action by the association except the investigation which is printed for their information apparently and submitted to them for decision. The necessary connecting link between the authorization of the agent and the binding effect upon the principal is entirely absent upon the face of the record. Mr. Strauss supplies it very easily by going outside the record, but there Mr. Wigmore says, he merely begs the question, and as I said the other day lifts himself by his own bootstraps. You cannot bind the agent or prove its binding effect by the purported admission itself. I would like to discuss these cases after I have had an opportunity to examine them.

The Court: The court will be at recess until ten o'clock tomorrow morning.

(Thereupon, the court stood at recess until April 30, 1941, at ten o'clock A. M.)

[fol. 5171]

April 30, 1941, ten o'clock A. M.

Proceedings were resumed at this time as follows:

The Court: Gentlemen, before proceeding with the testimony, may I inquire if form 2611, being the employees' report of accidents, is required to be made by employees in connection with every accident that occurs, whether there is any rule or regulation that makes such requirement of an employee of the defendant company?

Mr. Strauss: I think Mr. Hardwicke so testified.

Mr. Mason: The witness Fail testified that they frequently failed to make report of accidents, they simply forget about them. Apparently, whether there is any understanding of not, it is honored as much in the breach as in the observance. I don't know of any rule which specifically refers to form 2611, and says there must be a report on that form or in that form.

Mr. Strauss: Of course, counsel is sort of begging the question, is it the requirement? I think the testimony shows already that a report made of the accident on the form provided by the company for that report is form 2611, which the evidence also shows.

[fol. 5172] Mr. Booth: Yes, but there is no evidence that the superintendent is required or does use that form in making up his form T. It is there, he may use it or not as he pleases. If other facts and circumstances convince him that the employee is mistaken or has not accurately stated the facts of the accident on form 2611, he is at complete liberty to disregard it.

Mr. Mason: The only rule I know of in the rule book says: "In case of personal injury, loss of life, or damage to property, conductors must furnish wire reports of facts, with the name and address, and written statement when possible to obtain it, of each person who witnessed or has information concerning the accident." That is the requirement of a wire report from the conductor. The form 2611, of course, is not a wire report.

Mr. Strouss: There are other rules besides those that are in this rule book, there are bulletins that supplement the rule book.

The Court: Well, the purpose that the Court had in mind in asking this question is this, that it does seem from a reading of some of the authorities cited by the State that if there is any statutory requirement, which I presume [fol. 5173] there is not in this case, but any requirement on the part of the employees of the defendant to submit such report, that then under certain circumstances that report might be admissible in evidence. Well, the Court has not completed its examination of the authorities. I shall make no ruling at this time. You gave me so many cases, I haven't been able to wade through all of them as yet. You may proceed.

Mr. Strouss: I have no cross-examination of Mr. Sullivan. There is one thing I mentioned yesterday, and I again want to refer to, and that is the specifications of brakes adopted in 1933, which were to be made part of the record. Now, I think there should be at the present time those specifications. I believe they were sent to counsel by Mr. Browning immediately upon his return to Chicago, at least he sent me copies of them at that time and advised that he was sending copies to counsel for the defendant. I think the record should be completed in that respect.

The Court: Well, are you offering them, Mr. Strouss?

Mr. Strouss: Well, I will put them in. The record shows that they agreed to furnish those and make them a part of the record. If counsel don't want to keep their agreement [fol. 5174], I will put them in.

Mr. Mason: The record isn't closed yet. We will put them in. We have a witness to call and we will put them in. Just let us develop our case.

Mr. Strouss: Now, before the matter of the admission of 206 is completed, these bear upon the matter of the admissibility of that too; they have some bearing there, and I want them in the record for that purpose.

The Court: You may proceed.

[fol. 5175] W. G. FIFIELD was called as a witness in behalf of the defendant and being first duly sworn testified as follows:

Direct examination.

By Mr. Mason:

Q. Will you please state your name and residence, Mr. Fifield?

A. W. G. Fifield, San Francisco, California.

Q. What is your present occupation, Mr. Fifield?

A. Road foreman of engines, Coast division, Southern Pacific Company.

Q. How long have you been employed by the Southern Pacific Company?

A. It will be forty-two years in August.

Q. What was your first employment?

A. Fireman.

Q. You became a fireman for the Southern Pacific Company in 1899?

A. August, 1899.

Q. Were you promoted to engineer?

A. Yes, sir.

Q. When?

A. September, 1902, to switch engineer and to road engineer in May, 1903.

[fol. 5176] Q. Where were you first employed?

A. On the Coast division.

Q. Do you hold seniority as fireman and engineer on the Coast division at the present time?

A. I hold seniority as an engineer but not as a fireman.

Q. Seniority as a fireman isn't of much importance to you at the present time, is it?

A. Well, the seniority as a fireman was lost to men of my seniority by certain rules that went into effect. Men later on have a fireman seniority date but I have none and of course have no use for it.

Q. What is the date of your seniority as an engineer, 1902 as to switching and 1903 as to road?

A. That is correct.

Q. Were you promoted from engineer to road foreman of engines?

A. Yes, in 1923, November.

Q. Where did you then serve as road foreman of engines?

A. On the Coast division until November, 1930. From November, 1930, to May, 1931, on the Portland division. Then I returned to the Coast division and assumed my seniority as an engineer for four months. Then I went to the Salt Lake division in September, 1931, until May, 1936, [fol. 5177] as road foreman of engines, when I returned to the Coast division in that same capacity and I am still in that same position.

Q. Except for four months you have been road foreman of engines on three of the company's divisions since 1923?

A. That is correct.

Q. Will you describe the nature of your duties as road foreman of engines?

A. Well, road foreman of engines has general supervision of all employees in the transportation department, more particularly engineers and firemen. His duties are to instruct the men in the proper handling of their work. He makes certain tests, efficiency tests, also makes tests on the locomotives. He assists the master mechanic in the maintenance of his power and checks the work reports made by engineers on form 2323. He investigates accidents where train handling is involved. He examines men for promotion and of course numerous other duties.

Q. Does the road foreman of engines exercise any supervision over the use of the locomotives on his division?

A. Yes, to some extent he assists in the assignment of [fol. 5178] power and so forth.

Q. Do you as road foreman ride on locomotives?

A. Yes, indeed.

Q. To what extent in the course of a month?

A. I think it would average about 23 days.

Q. Would that be in the neighborhood of 3,000 miles?

A. It would run in excess of 4,000 miles.

Q. Is that a regular monthly experience of yours as road foreman of engines?

A. Yes, it frequently runs much higher than that.

Q. Does the road foreman of engines actually ride in the locomotive with the engine crew?

A. Yes.

Q. Does he ever undertake to operate the locomotive?

A. I do.

Q. Have you as road foreman of engines become familiar with the handling of trains, both freight and passenger, upon the various divisions where you have served in that capacity?

A. Yes, I think I am very familiar.

Q. Have you as engineer become familiar with the handling of trains on your division?

A. I was at the time I was engineer, yes.

[fol. 5179] Q. If I understand correctly the duties of a road foreman of engines, he is virtually a supervisor of the engineers and firemen in the conduct of day to day duty?

A. That is his most important duty, yes.

The Court: I didn't understand, Mr. Fifield, just what territory you have jurisdiction over?

A. San Francisco to Santa Barbara, California, with the intervening branches.

Mr. Mason:

Q. When you were road foreman of engines on the Salt Lake division, did your jurisdiction extend over the entire division?

A. Yes, sir.

Q. From Sparks, Nevada, to Ogden?

A. Sparks to Ogden and Fernley to Alturas; also the westward branch which branches off at Wendel and the line from Hazen to Mina.

Q. On the Portland division did your jurisdiction extend from Portland to Ashland and from Ashland to Crescent Lake?

A. No, sir, it extended from Albany south, I didn't have the district north of Albany.

Q. You had the district from Albany to Ashland?

A. Albany to Ashland and on the Cascade line to Crescent Lake including the branches, Marshfield branch.

[fol. 5180] Q. Is there any grade territory on the Coast division?

A. Yes, sir, we have a mountain grade between Santa Margarita and San Luis Obispo, 2.2 per cent.

Q. Is that the ruling or actual grade in that territory?

A. It is my understanding that that is the grade.

Q. What grade do you have between Santa Barbara and San Luis Obispo?

A. In that territory we have a ruling grade of one per cent. That is a very rolling territory between Santa Barbara and San Luis Obispo, up and down, with one per cent grade.

Q. Does it have any of these dips and ridges sometimes referred to as hogbacks?

A. It hasn't much of anything else.

Q. Are you familiar with the grade territory on the Salt Lake division?

A. Yes, sir.

Q. Have you operated trains over it?

A. Yes, sir.

Q. What are the longest trains that you have yourself handled in freight service?

A. I have a recollection of handling 137 cars at one time on the Salt Lake division. I know I handled several [fol. 5181] 125-car trains. The trains usually consist of around 104 cars on the Salt Lake division for the reason that that was the length of the sidings.

Q. What are the longest passenger trains you have ever handled?

A. I have handled as many as 31 cars but that was only in case of an engine failure on some train ahead and they doubled up two trains and made 31 cars. The usual train on the Coast and also on the Salt Lake division is 16 cars but frequently we have 17.

Q. Have you handled those trains?

A. Oh, yes.

Q. Do you regularly operate 16- and 17-car trains on the Coast division at the present time?

A. Yes, sir, that is, passenger trains.

Q. What is the usual length of the freight trains being handled on the Coast division?

Mr. Strouss: I am going to make an objection to that. I don't see that that is proper surrebuttal. We haven't gone into any matter on the Coast division in our case.

Mr. Mason: We are qualifying the witness merely to rebut the testimony of Mr. Stevenson, Mr. Kennedy, to the extent necessary, and Mr. Cooper, all of whom testified [fol. 5182] as to train handling.

The Court: The objection is overruled.

Mr. Mason: Will you read the question?

(The last question was read by the reporter.)

A. The length of freight trains on the Coast division is governed by two main factors, I would say, one of course would be the number of cars available for movement; the other factor would be the number of brakemen available to handle a certain number of cars under the California full crew law. It is sometimes necessary that we cut down a train due to the fact that we haven't the brakemen available. The usual length of the train is 99 cars although we frequently handle up to 124.

Q. Is that over the grade between San Luis Obispo and Santa Margarita?

A. Between San Luis Obispo and Santa Margarita we handle 99 cars.

Q. And between Santa Barbara and San Luis Obispo?

A. We handle 99 in that territory.

Q. Do you yourself handle those trains?

A. Yes, I have handled them.

[fol. 5183] Q. What types of engines have you operated, Mr. Fifield?

A. I think every type that the company owns.

Q. Have you operated the F type?

A. Yes, sir.

Q. In the various series?

A. Yes, sir.

Q. Has that been in use on the divisions where you have served?

A. It has been in use on all of the divisions that I have served on.

Q. Have you operated the 5000 class or S. P. type?

A. Yes, I have; not so frequently, though, as the other type. I have had those engines less than any engines that the company owns, although I have handled them.

Q. Have you handled the AC class of power in the various series?

A. Yes, particularly the AC-8.

Q. You were present in the court room, were you not, when the witnesses Cooper and Stevenson testified?

A. Yes, sir.

Q. Also when the witness Cheek testified?

A. Yes.

[fol. 5184] Q. I call your attention to a question which was asked of Mr. Stevenson, appearing at page 4554 of the transcript: "Can you always control the slack in a train?" And a portion of Mr. Stevenson's answer was,

"No, not with the long trains, we are unable to control it." I will ask you the same question, can you always control the slack in a train?

A. Not always, but there is not much difference in the length of a train, as far as that is concerned, except in the amount of slack there is in the train. It is largely a matter of an engineer becoming accustomed to handling a certain train. He is very well acquainted, as a rule, with the territory over which he operates, and when he becomes accustomed to handling a hundred-car train, he learns the particular action of that train over the district, and if he continues to handle a hundred cars long enough, he will be able to handle a hundred cars better than he will seventy. That will work exactly the other way, a man who is accustomed to handle 70 cars would be able to handle 70 cars better than he would a hundred, but it is just a matter of education.

Q. Does the ability of the engineer enter into the picture at all?

[fol. 5185] A. Oh, yes, there is no question about that.

Q. Now, at line 18, counsel read to the witness Stevenson from the air book, "The heavier the engine and the longer the train, the greater is the care required." And said, "You have found that to be true?" This is line 18, and following on page 4554. Have you any comment upon that question and the witness's affirmative answer?

A. Well, I agree that you have to use more care with heavier power, but the heavier power has a very distinct advantage in train handling.

Q. Will you explain why that is?

A. Well, with the lighter power it would be necessary to jerk the train, I would say, in order to get the train started, whereas, with the heavier power you can start the train easily, and, of course, we must understand that in starting a train the momentum of the cars already started is a large factor in assisting you in starting the whole train. Therefore, with the larger power it is not necessary to exert so much energy, I would say, and not jerk the train so far back in the train in order to get it started.

Q. Now, at line 22, on page 4554, reference was made to the first sentence on top of page 9 of the air book, [fol. 5186] which was read to the witness as follows: "With high pressures and large main reservoirs, it is very easy

to overcharge the head end of the train; many detrimental effects result, such as stuck brakes, flat and broken wheels." and the witness was asked, "Have you found that to be true?" And the witness answered, page 4555, "I have found that to be the case, more particulalry on the long trains than on the shorter trains." I will ask you, Mr. Fifield, if in the line of your duties as road foreman of engines you will draw upon your experience and comment upon the question and answer of the witness Stevenson?

A. You read only the first part of that subject, Mr. Mason. I think if you had gone to the second paragraph or the third, I believe it is the second, however, you would find that the statement is made that the above conditions varied to such an extent, or something to that effect, that it was impossible to make any set rule. That may not be the exact reading.

Q. I will hand you the air book and ask you to point out the passage that you have in mind.

A. Well; I will refer first to the question where it comes, "With high pressures and large main reservoirs, it is [fol. 5187] very easy to overcharge the head end of the train." The paragraph that I refer to states—

Mr. Strouss: What page is that?

The Witness: Page 9. "The length of time to leave the handle in release position to effect a release of all brakes and yet avoid overcharging depends to such an extent on the conditions just explained, the length of the brake pipe and the main reservoir volume, that no fixed rule can be established." That makes the rule flexible to the extent that it is the duty of the road foreman of engines to instruct his men on the proper manner in which to recharge and charge, or release brakes.

Mr. Mason: And is that a duty that you undertake in your capacity as road foreman of engines?

A. Yes, sir.

Q. Now, further, on page 4555, a large part of the balance of the first paragraph on page 9 of the air book was read to the witness as follows: "Many are of the impression that because the brake-pipe gauge shows higher than the auxiliary reservoir pressure is intended to be, that all brakes are released; as a matter of fact, this is a condition that exists only on the first few cars in the train,

[fol. 5188] the pressure at the rear not having sufficiently increased to release the brakes. In fact, 25 cars back from the engine it cannot be determined whether the brake-valve handle is in release or running position," and the witness was asked, "Have you found that to be true in your experience?" And he answered, "Yes." What have you to say in that connection?

A. In the first place, I believe that the very phraseology of the statement is open for debate. As I remember your reading, it said that, "Many are of the opinion." I believe that a statement of that kind is debatable, and I further believe that if that refers to engineers, who are most vitally interested in the handling of air, that the statement is not true.

Mr. Strouss: Now, I move that be stricken as hearsay, and opinion evidence, when the witness is testifying as to what the opinion of other engineers may be, and that is apparently what he is doing at the present time.

The Court: I didn't so understand him, Mr. Strouss.

Mr. Strouss: I wish you would read the answer of the witness, please.

(Thereupon, the last answer of the witness was read by [fol. 5189] the reporter.)

The Court: Yes, I will sustain the objection.

Mr. Strouss: I move that the answer be stricken.

The Court: And that portion of the answer may be stricken.

Mr. Mason: Now, on line 16, page 4555, a portion of page 11 of the air book was read to the witness as follows: "An automatic brake application will cause the brake pipe pressure to reduce faster at the head end of train than at rear. This results in the head brakes applying in advance of those at the rear, and tends to bunch the train and compress the draft gears." The witness was asked, "Have you found that to be true?" and said, "Yes." Will you say, Mr. Field, whether or not the engineer in the engine is able to control the results which are indicated by the excerpt which was read to the witness Stevenson?

A. I will say first that the statement, the brakes begin to apply on the head end of the train, is correct. In reference to what the engineer can do, he has control of that to a large extent in that he can limit his brake pipe reductions. The

[fol. 5190] lighter the reduction, the less likelihood of setting up any severe slack action in the train.

Q. Now, at the bottom of page 4555, there was read a portion of the last paragraph on page 11, reading: "In releasing, the head brakes commence so much before those at the rear that, as far as holding power is concerned, they are practically off before the rear ones start to release, causing the slack to run out rapidly. Just how serious the result may be largely depends on how heavily they are applied, the amount the draft gears are compressed and how slowly the train is moving." In this connection, is the engineer able to exercise control?

A. Yes, he is, in that he can use what we call a bridging method of braking, which amounts to a gradual release of the brakes on the head end of the train, and overcomes the objectionable running out of slack. Now, I want to explain, if I may, that there is no authority for the term "bridge braking."

Q. It is not defined in the air book, is it?

A. No, sir; it is a term that has been used by engineers to describe a method of handling different from the orthodox method of the long and short cycle. I was present [fol. 5191] when Mr. Cooper testified, and I make this statement to show that the term is not authorized and, furthermore, is subject to the interpretation of the individual, and, as I remember Mr. Cooper's testimony in reference to the description of bridge-braking on the Santa Fe, he stated that the thing to do was to get hold of the train with about the right amount of air to hold it, and then place the handle of the brake valve in such a position that a certain amount of air would flow to the brake pipe to compensate for any leakage which might be taking place, and, as I remember, he stated that the best train to bridge would be one that had about four-pound leakage.

Q. You mean four pounds per minute?

A. Four pounds per minute. Now, that was Mr. Cooper's interpretation of bridge-braking. I will give you my interpretation of bridge-braking. We take hold of the train, as Mr. Cooper stated, with what we think is the proper amount of air to hold the train, but we don't attempt to find the place on the brake valve that will feed up the leakage which is taking place. There is too much guesswork in that kind of operation. Therefore, we, in bridging, operate our brake

valve between the lap and the holding position, and feed [fol. 5192] the train up to exactly what we want.

Mr. Strouss: Now, just a moment. The witness is saying "we." If he is trying to testify as to somebody else's method of operating a train, I object to the testimony. If he is testifying as to the way he operates—

Mr. Mason: I think the word "we" was used quite a little by Mr. Cooper, or he used the second person and said "you."

The Court: I don't know whether it was objected to or not. It is objected to now. I will sustain the objection. The witness may testify from his former experience as to how he handled it, observations that he may have made, having seen others handle it, but I think the use of the plural there is objectionable.

Mr. Mason: Is what you are describing the method you have yourself used, Mr. Fifield?

A. That is the method that I have used myself, and it is the method that I have observed engineers using, when I have been riding the engine.

Q: Is it a method that you teach to engineers?

A. It is.

[fol. 5193] Q. Now if a train is moving slowly, Mr. Fifield, under circumstances concerning which Mr. Stevenson was questioned, would any attempt to release be made?

A. There shouldn't be any attempt to release if the train was moving too slowly.

Q. On page 4547 Mr. Stevenson was asked if there was anything peculiar to the controlling of slack on mountains and grades, "Is there any peculiar difficulty there?" I will ask you the same question that Mr. Strouss asked of Mr. Stevenson, if there is anything peculiar?

A. I have had no peculiar difficulty nor has any come to my attention through reports or otherwise. Mountain braking, of course, differs from light grade braking or level territory in that in the mountain grade braking we use retainers.

Q. What is the purpose of the retainers?

A. The retainer has only one purpose and that is to assist an engineer in holding the train during the time he is recharging his brake system.

Q. Mr. Stevenson in his answer said that he was unable to—he used the second person plural, "You are unable to

apply those brakes on the rear end of a long train because of the insufficient time between reductions." I take it he was [fol. 5194] not referring to Mr. Strouss at the time. What have you to say as to that particular comment of Mr. Stevenson?

A. Well, if such a condition existed then they should be using retainers on the train.

Q. If the retainers are in use is there any such thing as insufficient time to recharge between applications?

A. There shouldn't be any such thing if the proper number of retainers were used for the weight of the train on a particular grade.

Q. Is there anything as to the engine equipment which enables the train to be recharged?

A. On all of our engines we have two 8½-inch cross-compound compressors with large main reservoir volume which enables us to get the air back there fast.

Q. If there is any such condition as inability to recharge between applications, what would you as engineer do?

A. I would stop.

Q. At line 17 on page 4557—

The Court: (Interrupting) Pardon me, you say you would stop and insist upon the use of retainers?

A. If I thought it was necessary.

[fol. 5195] The Court: You heard the testimony of these engineers that retainers were not in use either on the Tucson or Rio Grande divisions as I recall it?

A. Yes, I heard that testimony but I take it if they were not using retainers that it was not necessary to use retainers and the condition had never arisen where it was necessary for them to stop and charge the train.

Mr. Strouss: I move that last be stricken, that is certainly a conclusion.

Mr. Mason: It is a conclusion of a man who is fully qualified.

The Court: The motion to strike will be denied.

Mr. Strouss: He is testifying here there has never been any occasion to stop the train.

The Court: He is basing that upon the testimony which he says he heard.

Mr. Strouss: There wasn't any testimony as to whether they had or had not.

The Court: The Court will adhere to its ruling.

Mr. Mason:

Q. Line 17, page 4557, Mr. Stevenson testified in answer to a question as to the effect of increase in train length upon ability to recharge the brake pipe line, "Well, as the brake pipe increases in length, it takes that much longer [fol. 5196] to recharge those brakes at the rear end." Have you any comment on that statement?

A. It would take a little longer to charge 100 cars than it would 70 cars but I can't remember now—did you say that was mountain territory or is it valley territory or light grade braking?

Q. He spoke of the effect of the time required to recharge the brake pipe. What is the effect of the increase in the length of a train upon your ability to recharge your brake pipe line? The preceding question referred to mountain or grade operation but there was nothing in this question to indicate which it was. You might consider both.

A. If it was mountain operation the retainers would take care of it because you would have that many more retainers to take care of that much weight and there would be no difference in the operation. While it would take a little longer the retainers would give you that interval of time.

Q. If it were not in mountain but in level or light grade?

A. It might take a little longer to charge the train but certainly that train could be handled without depleting the brake pipe. If not, I will have to go back to my original statement that if such a condition existed the thing to do [fol. 5197] would be to stop the train.

Q. On page 4558 reference was made in the question to paragraphs 18 and 19 on pages 29 and 30 of the air brake book, paragraph 18 referring to light grade braking and paragraph 19 to heavy grade braking. I will ask you to have those two paragraphs before you. Mr. Stevenson was asked after those paragraphs were read to him, "Is that the method of braking that you use?" And he answered, "Yes, sir." Is it not a fact that there are two methods of braking involved in the question, one in paragraph 18 and the other in paragraph 19?

A. Yes, they are different propositions entirely. One is light grade braking and the other is heavy grade braking.

Q. Which is the heavy grade braking? Is that the long cycle or short cycle?

A. We use the short cycle method in heavy grade braking.

Q. In light grade braking what is the method described?

A. I will have to go back to the bridge braking again because while it is more or less a long cycle type of braking, the releasing of the train is done under a little different conditions. By that I mean the pressure is gradually built up on the head end of the train which releases a number of brakes on the head end and overcomes the slack action which would take place if we immediately went to release position as contemplated by the long cycle method. By the long cycle method, if we went to release position the head brakes would all kick off and then the slack would run out in the train due to the fact we were not able to get the brakes off as quickly on the rear as the brakes were releasing on the head end. That is why we use the bridge system in order to get the slack out of the train before the brakes even start to release on the rear end of the train or in any particular part, just gradually release on the head end.

Q. Does a knowledge of the road assist the engineer in that handling?

A. Yes, that is very important. He will pick out his places on the road to make the release of the brakes at probably some little let-up in the grade or possibly a sharp curvature in various places where wheel friction would assist in holding the train during the time he was releasing.

Q. I think you said you had actually operated trains over hogback territory. Have you in mind any particular [fol. 5199] territory?

A. I believe I previously referred to the Monterey branch on the Coast division particularly as being entirely hogback territory. No, pardon me, that allusion was to the railroad between San Luis Obispo and Santa Barbara.

Q. Is that a territory where you use light grade braking by the bridge method you have described?

A. Yes.

Q. Have you used that system in that territory?

A. Yes, we use it all the time, I do. I use it all the time.

Q. Do the engineers on the engines where you are present as road foreman use it?

A. Yes, they showed me the trick in the first place.

Q. Will you say whether or not it has any effect and, if so, what effect upon the control of the train?

A. It is the only method I know of that you can use to control the slack in a train in that particular type of territory.

Q. Reference was made at page 4561 and 4562 to territory between Planeport and El Paso which I understand to be in Texas immediately north or east of El Paso and [fol. 5200] a rule reading, "Sufficient retainers will be used on westward trains between Planeport and El Paso to adjust slack." The question was then asked the witness, "Retainers are sometimes used to adjust slack?" Do you have any territory where you use retainers for the purpose of adjusting slack in the speed of the train in the operation of trains of 99 cars as you have described?

A. Yes, going into Santa Barbara eastward for about four miles we are going down a one per cent descending grade. In that four miles a little over two miles of it is in the thickly populated Santa Barbara city. We are required to keep the speed of the train down to 20 miles per hour. In order to do this we set up fifteen retainers solidly on the head end of the train on trains up to 75 cars. Above 75 cars we use twenty retainers. Then we operate the train with light reductions and the braking is practically done by the head brakes in the train. By that method we are able to comply with the 20-mile speed restriction, the braking being done by light reductions with retainers on the head end of the train, the brakes on the rear end of the train do not set and the slack stays in against the engine [fol. 5201] all the way down to the yard. I believe that is a similar condition that you referred to. However, that is subject to objection I presume.

Q. I was going to ask you, are these retainers placed in operative position while trains are moving or while they are stopped before you go down to Santa Barbara?

A. While the trains are moving.

The Court: That is done by your brakemen?

A. Yes, sir.

The Court: Is every car equipped with a retainer that can be used if necessary?

A. I believe every car is equipped with a retainer. I have never seen one that was not equipped. You refer to freight cars?

The Court: Yes.

A. If it was passenger cars, I would say that some passenger cars are not equipped with them but I wanted to be clear that you referred to freight cars.

The Court: Yes, I had reference to freight cars.

Mr. Mason:

Q. Returning to pages 4568 and 4569, the witness Stevenson stated that in rolling territory it was more difficult to control slack action than in other territory. Have you any [fol. 5202] comment upon that answer?

A. Yes, I will agree with engineer Stevenson that it is more difficult. However, it is one of the things that an engineer has to master in his vocation.

Q. What as to the difference between 100 cars and 70-car trains in that type of territory? Is there a possibility of less slack action on the longer trains?

A. Slack action of course just simply means a change of speed in certain parts of the train. It is possible that in a train of 100 cars or more the slack action would be absorbed before it got to the end of the train, where with a shorter train it would extend the full length of the train. It is just one of those conditions, mechanical operated conditions.

Q. What factors would tend to cause the slack action to be absorbed before reaching the rear end?

A. Your draft gear will absorb a certain amount of it. In fact the tendency of a draft gear is to absorb slack.

Q. Do physical characteristics of hogback territory sometimes tend to cause the slack to be absorbed?

A. Yes, they do.

[fol. 5203] Q. Have you any particular case in your own recent experience which will exemplify your testimony as to the control of slack in hogback territory?

A. I had one most particular movement last August. We were required to handle troop movements from Monterey located on the Monterey branch. This Monterey branch I would say is beyond the hogback category, it is almost scenic railway. It is up and down, every foot of it. A train of any length is on at least two hogbacks at one time. In making this movement I handled one particular train with a double-header, 11 Pullmans, 2 baggage cars on the rear and 39 boxcars on the head end.

The Court: That is what you call a mixed train?

A. Yes, it was mixed. However, it was just as mixed before I started as when I got through with it. We had no trouble in handling this train over this branch at all. It did require care and it got it.

Mr. Mason: Q. Did you personally handle the train?

A. Yes, I handled that train myself.

The Court: We will take our mid-morning recess at this time.

(Thereupon a short recess was taken after which proceedings were resumed as follows.)

[fol. 5204] The witness FIFIELD was recalled to the stand, and proceedings were resumed as follows:

The Court: You may proceed.

Mr. Mason: On pages 4569 to 4570, commencing on the last line on page 4569, Mr. Fifield, the question was asked of the witness Stevenson, "Is your ability to start a train affected by the length?" And he answered, "Yes, with the longer trains we have to use extreme caution in starting them. There is more weight involved, and more slack. We have to use extreme caution in starting those trains to avoid pulling them in two." He also said, "It takes a longer time to start them, and a longer time to stop them." Have you any comments on those answers of the witness Stevenson?

A. Only that with the heavy power that we have we have to use more care. So far as taking longer to start the train, it would take a little longer, you take the difference in time between the time—well, it would just take as much difference as the difference in the length of the train in starting, but it would only require more care, not necessarily entail any rough handling.

Q. What about the stopping, is that any more difficult, or does it take any longer with a long train than a short [fol. 5205] one, if you have the proper kind of engine?

A. It would take a little more time to do it, not very much. I mean by that, you use more care in the handling of the train; necessarily it would entail a little more preparation for the stop.

Q. By the way, you referred to what you would do in case the air pressure became depleted or you were not

able to recharge the train line. You said you would stop the train and recharge. How long has it been, in your own personal experience, since you have had to stop a train in those circumstances?

A. I think, as I remember, I stated that the thing to do would be to stop the train. I have no recollection of ever having stopped for that purpose.

Q. You don't recall that you as an engineer have ever had to do it?

A. No, I never did.

Q. Have you as the road foreman, in accompanying an engineer, ever seen an engineer do that?

A. I don't recollect of any.

Q. Now, in Mr. Copper's testimony, at page 4291, there [fol. 5206] was quite a long reference to the overcharge method of breaking a train. Do you yourself use the overcharge method, as described by the witness Cooper?

A. I do not, and I will say, further, that the overcharge of a train is one of the most dangerous things or dangerous practices that an engineman can get into in reference to train handling.

Q. Do you permit engineers under your supervision on divisions where you are serving as road foreman to use the overcharge method?

A. No, I do not.

Q. Do you instruct against it?

A. Yes, always. I might explain that overcharging simply means placing the brake valve in the release position and putting a higher pressure in the brake pipe than the setting of the feed valve. Now, as soon as you commence to operate the brakes, the feed valve takes control of the action, therefore, unless you follow the overcharge system, which you must do after you have started it once, or if you don't, it is going to result in hot wheels, and in some cases, it may result in an undesired emergency, emergency application of the brakes.

[fol. 5207] Q. You recall Mr. Cooper describing the air brake equipment on Santa Fe locomotives as consisting of only a single compressor?

A. Yes, that is my recollection.

Q. Are the locomotives in general use on the Southern Pacific, with which you are familiar, so equipped, or are they equipped with two compressors?

A. They are equipped with two compressors.

Q. That is on, well, all the series later than the Consolidation type?

A. Well, there are a few Mountain types yet that have only one compressor, but most of them have two compressors on.

Q. Mr. Cooper, in his testimony at page 4332, also referred to the more difficult task, he says it takes longer to stop a longer train than it does a shorter train because you have to take care of the slack and control it. When you handle longer trains, Mr. Fifield, do you or do you not have a size and type of locomotive appropriate to the size of the train you are handling?

A. Yes, we have sufficient power to handle the train.

Q. And to control it?

A. Oh, yes.

[fol. 5208] Q. Does the use of the locomotive with that power enable you to stop the train as well as to start it?

A. Yes, the locomotive has nothing to do with stopping the train outside of providing the air pressure to operate the brakes.

Q. Do the larger engines have larger compressors and reservoirs to give you more air?

A. Well, we have a standard eight-and-a-half-inch cross compound compressor on all of our engines, large and small. The larger engines, however, have a larger main reservoir capacity, and, of course, they all have the two compressors.

Q. I think you spoke at the outset of your testimony, Mr. Fifield, as having had experience in passenger train operation. Have you run regularly as a passenger train engineer?

A. Yes.

Q. Do you ride passenger trains regularly as well as freight trains now?

A. Yes, sir.

Q. Have you as a passenger train engineer, or as road foreman on the engine of a passenger train, had experience with emergency stops of passenger trains?

A. Yes.

[fol. 5209] Q. What occasions emergency stops of passenger trains most frequently?

A. Most frequently is the grade-crossing accident. In fact, that is the very great percentage of the stops. Other emergency stops are very infrequent.

The Court: Would an emergency stop be required if a single head of livestock were on the track?

A. I wouldn't consider it advisable.

Mr. Mason: Now, when you make an emergency application of the brakes on a passenger train, what is the result as to the application of the brakes on various cars?

A. Well, it is almost simultaneous. The train is short, of course, and the period of time between the operation of the brake on the head end and that on the rear, I don't know what it would be in seconds, but it would be so close that you wouldn't be able to determine, I think, from observation.

Q. Is there any substantial interval of time between the application of the brakes on, let us say, the thirteenth car of a passenger train in emergency, and the sixteenth car?

A. No, I think not.

Q. Does the length of the passenger train within the limits [fol. 5210] of the trains which you have regularly operated have any substantial effect upon the length of time that the application will take place throughout the train?

A. No.

Q. Do you ever ride in the cabooses of freight trains?

A. Oh, once in a while; not very often, though. My business is on the head end. I have ridden in a few cabooses.

Q. Did you ever ride in the caboose without the engineer of the train knowing about it?

A. Well, I have.

Q. Do you ever make any selection of trains according to length, when you undertake to ride in the caboose?

A. No.

Q. Mr. Cooper referred at page 4263 to a quick service feature of the K type triple valve. Are you familiar with that feature?

A. Yes. I heard Mr. Cooper's definition of it, and I will say that his definition was correct.

Q. He said also, I think, that it was an improvement, and resulted in smoother handling and got the air to the rear of the train, and released the rear brakes and held the [fol. 5211] head end applied and created a smoother handling of the train, that it would apply the brakes quicker throughout a long train more uniformly. Do you agree with his characterization?

A. Yes, that is correct.

Q. Has there been any other substantial improvement of the K type triple valve within the last few years?

A. Well, of course, they began—I don't know just what year it was but they began to put in stronger spring, a graduated spring in the triple valve to overcome undesired emergency.

Q. In your experience, did the installation of these stronger graduating springs result in cutting down the frequency of undesired emergencies?

A. Yes, it did, materially.

Q. Now, at page 4279, and again at page 4285, reference was made to the Air Book, and Mr. Cooper was asked this question, "The further statement appears, the heavier the engine and the longer the train, the greater is the care required." Mr. Cooper answered that he had found that to be true in his experience, "The longer the train the more slack." I think you have commented upon a somewhat [fol. 5212] similar answer by Mr. Stevenson, but I will ask you whether it is harder to control the long train than if it were a short train because of the factors mentioned by Mr. Cooper, or whether it is simply a case of using greater care?

A. It is a case of using greater care.

The Court: Does it require more skill and experience in handling that type of train?

A. I would say that it requires more skill with that particular type of train. That is to say, that a man must become accustomed to handling that type of a train.

Mr. Mason: Is that the character of the skill you mean and experience in that particular handling and on the district where it is to be handled?

A. Surely, those are factors that must be considered.

Q. And when experience has been obtained, and where proper instruction by the road foreman is available, is it any more difficult for engineers, from your experience and as you have observed them, to handle trains of 100 cars or 99 cars, than if they were trains of 69 cars?

A. I don't know whether you refer, when you speak of difficulty, I don't know whether you refer to physical exertion or what you mean exactly, but there is no more physical exertion. It does require a little more care in the handling of the engine.

Q. Does it approach the impossible in the case of the long trains any more than it does in the case of the short trains?

A. Oh, no, we are handling those trains every day.

Q. Now, on pages 4283 and 4284, Mr. Cooper said if you were operating a train—first of all, he said, “Your ability to control slack in a train rests solely on your ability to apply and release the brakes throughout the train. If you are operating a train where you are unable to keep it fully charged down the grade and you fail to operate your brakes on the rear or fail to release them, you are liable to run into a serious slack action.” Will you say whether or not that is correct, in your experience?

A. I think I explained that when I explained our system of what we term bridge-braking.

Q. May I remind you also of your explanation of handling a train into Santa Barbara. Would that method apply to Mr. Cooper’s general statement?

[fol. 5214] A. If the territory warranted the use of retainers for the purpose of controlling the slack, that is the way to do it.

Q. Is it always necessary to apply and release the brakes on the rear end of the train in order to avoid serious slack action at the rear end?

A. No, not always; sometimes it is not even advisable to have the brakes set on the rear end of the train.

The Court; Pardon me. Unless you use retainers, if you set the brakes at all, it would set them on the rear as well as on the front, wouldn’t it? You cannot elect to say just how far back you are going to set them?

A. You can to some extent. Let me explain that. All of the air that goes into the train comes from the engine. The pressure on the head end of the train may be up to the setting of the feed valve, but in the transmission of the air to the rear of the train, there is what we term a brake pipe gradient, meaning that the pressure on the rear of the train is lightly lower than it is on the head end. Now, to answer your question, we will say that we have 74 pounds of air in the caboose and 90 pounds on the engine; the engineer [fol. 5215] makes a six-pound brake pipe reduction. That means that he draws the pressure down on the head end of that train to 74 pounds and results only in a leveling up of the brake pipe from the engine to the caboose and makes no set of the brake on the rear of the train. However, the

six-pound reduction is effective on the head end to the extent of two-and-a-half pounds for each pound taken up, represented in brake cylinder pressure. Now, that is how the brakes can be set on the head end of the train and no brake having yet become effective on the rear. Any further brake pipe reduction, of course, would then become effective on the brakes on the rear and the brake would become set. That is why it is sometimes advisable for an engineer to use slight reductions in order to avoid any run of slack. That is its good features. If we were to charge the rear of the train to the full 80 pounds, and we made a six-pound reduction on the head end, that six-pound reduction would become effective on the rear. The air from the rear would flow to the head end, making the brakes effective on the rear end. At the same time the passage of air from the rear toward the head end might possibly be absorbed by the triple valve as [fol. 5216] it passed there and cause a release of some brakes toward the head end of the train, which would set up a bad condition. In other words, it is preferable to have the brake pipe gradient for that reason.

The Court: Well, would it be possible, under your short cycle system of braking, to apply the brakes and have them being applied on the front end of your train and then releasing it quick enough before that could go clear on back through?

A. Yes, it could be done; but of course I don't advocate the short cycle of braking except in mountain-grade braking where retainers are used, because the short cycle method wouldn't work on light grade braking; it would work, but I mean it wouldn't be the proper method to handle it in order to avoid slack action in the train.

Mr. Mason: At pages 4304 to 4306, Mr. Cooper indicated that on his trains he had difficulty in releasing and recharging because of train length, and he said particularly at page 4306, "Before we can get that pressure back to the rear end after making a brake application, our train is gaining in momentum to such an extent that we have to go after them again, and after about the second application that way, we don't operate the brakes on that train of that length, we [fol. 5217] are just helpless," and it was specified in the question and answer that this was in mountain operation where he was working the brakes continuously down the

grade. Now, I will ask you in the mountain-grade operation with which you are familiar on Southern Pacific train, Mr. Fifield, do you have any trouble in releasing and recharging because of train length?

A. I don't, because if I went against the condition cited by Mr. Cooper, I would be using retainers.

Q. Now, his statement here, particularly as to his helplessness, are you helpless in the handling of long trains on mountain grades?

A. I am not afraid of them, I can handle any of them.

Q. Have you ever seen any of your engineers helpless in the handling of their trains?

A. No, I never have.

Q. Have you ever heard of an engineer confessing helplessness?

Mr. Strouss: I object to that.

The Court: Yes, the objection will be sustained as to the last question.

Mr. Mason: At page 4333 and following, Mr. Cooper spoke [fol. 5218] about emergency stops in order to avoid grade-crossing collisions, at which time he was referring to freight trains entirely, not to passenger-train operation.

Q. In your operation of freight trains, Mr. Fifield have you made many intended emergency stops by application of the air from the locomotive?

A. I have no recollection of ever having made one myself. As road foreman of engines, in about eighteen years I have investigated two cases of that character.

Q. Is that all?

A. That is all. One was on the Salt Lake division, and that was a train, I think—

Mr. Strouss: I object to hearsay testimony as to what he investigated.

The Court: I don't know as I fully get the import of your objection.

Mr. Strouss: Well, I object. He is about to testify as to the results of his investigation of accidents, not that he was in but he has investigated. I object to it as hearsay.

The Court: What he saw?

Mr. Strouss: No, not what he saw, because he wasn't there at the time of the accident.

[fol. 5219] Mr. Mason: Did you make an investigation?

A. Yes.

Q. What was the length of the train?

Mr. Strouss: Wait a minute. I want to ask the witness a question or two.

Q. What was the character of the investigation?

A. The investigation was in reference to the cause of a break-in-two.

Q. Were you there when it happened?

A. No.

Q. The investigation you made was subsequent to the happening of the accident?

A. Yes.

Q. And what you learned was what was told to you by persons who were there?

A. Yes, what I developed from testimony from the crew.

Mr. Strouss: I object to it as hearsay.

Mr. Mason: Did it include the reading of the forms 2611, Mr. Fifield?

A. I can't give it to you from memory at the present time.

The Court: I will sustain the objection.

Mr. Mason: Reference was made at page 4560, I think, in the Stevenson testimony, to the braking of trains in Arizona [fol. 5220] on the grades out of Steine, New Mexico, and Dragoon and Mescal, Arizona. Now, it is already in evidence, Mr. Fifield, that the ruling grade between Steins, New Mexico, and San Simon, Arizona, is 1.4 per cent, between Dragoon and Benson, Arizona, 1.4 per cent, and between Mescal and Benson, 1.4 per cent, and also that retainers are not in use on that territory except where the engineer or the conductor demands. Have you any experience in train handling upon grades of 1.4 per cent, or approximately that figure?

A. Yes, on the Salt Lake division between Cobre and Montello, also between Moor and Wells.

Q. I think the grades on those portions of the line are also in evidence as being 1.5 per cent, or approximately that. Have you handled trains of 100 cars down those grades?

A. Yes, I have handled more than a hundred cars.

Q. And I will ask you, if your testimony this morning is based in part on your experience gained in handling such trains in that territory?

A. Yes, that was part of my experience.

Q. Mr. Stevenson also referred to the use of the retainer on the tender of the locomotive. Have you had any experience with that type of operation?

[fol. 5221] A. Yes, we can use it the same as any other retainer can be used, but it results in the heating of the wheels on the tank, and engineers as a rule try to avoid the use of it.

[fol. 5222] Q. In the handling of passenger trains of more than 14 cars do you notice any difference in the starting or stopping as between such trains and trains of less than 14 cars?

A. Not any more than you have to use care in starting.

Q. Does the length of passenger trains up to 16 or 18 cars present any greater difficulty to the engineer in starting and stopping?

A. No, I don't believe it is more difficult. We handle those trains right along, 16 cars is the regular train on the division I work on and I handle those trains myself. I wouldn't know how many cars I had unless someone told me or I looked back and counted them as far as the operation is concerned.

Q. Does the starting and stopping of these longer passenger trains take any longer time particularly?

A. No, each car is equipped with its own brakes.

Q. As you increase the train length, you increase the braking power?

A. Yes, sir.

Mr. Mason: That is all, you may cross-examine.

[fol. 5223] Cross-examination.

By Mr. Strouss:

Q. Mr. Fifield, you spoke about the improvement of the K triple valve. The improvement I believe you mentioned was the stronger graduating spring?

A. That is right.

Q. That was about 1924 or 1925, wasn't it?

A. It may have started about that time but if my recollection serves me it was a little later than that when we

began to adopt them on the Southern Pacific. I may be wrong about that, however.

Q. How long is this grade between Cobre and Montello?

A. 18 miles.

Q. And between Moor and Wells?

A. Slightly in excess of 9 miles.

Q. Did I understand you to say in your direct testimony that the method of braking prescribed in the Southern Pacific air brake rules which is exhibit No. 319 in evidence here is what you call the bridge method?

A. No.

Q. What is this method which is set forth in paragraph [fol. 5224] 18 entitled "Light grade braking" page 29?

A. That would be the long cycle.

Q. This is the long cycle?

A. Yes.

Q. How did you say the long cycle differs from the bridge method?

A. As I interpret bridge method it differs this way, Mr. Strouss, that in light grade braking we use a sufficient brake pipe reduction to brake the train down to the proper speed and we must have the speed of the train high enough in order to release those brakes, otherwise we would have to stop the train if the speed got down too low. With the light grade braking when we intend to release the brakes on the train we simply put the brake valve over into full release position and recharge the entire train. The system of bridging as I interpret it on the Southern Pacific, we operate the brake valve between the lap and holding positions which has the effect of gradually recharging the brakes on the head end of the train and releasing a certain number of them. The driving brake is kept off during this operation, the engine is working the slack, drifting the throttle and the slack is kept out of the head end of the train. That is the [fol. 5225] difference between the bridge braking as we interpret it and the light grade braking.

Q. Of course you are familiar with the Southern Pacific Company air brake rules and regulations, are you not, which are in evidence as exhibit No. 319?

A. I believe so.

Q. Those are issued by the Southern Pacific Company?

A. That is right.

Q. They are given to all enginemen, firemen, and engineers?

A. Yes, sir.

Q. And they are expected to read and understand and know those rules?

A. That is right.

Q. Are they to be guided by those rules in the operation of trains?

A. Yes, as far as they are applicable to the particular movement.

Q. That is the purpose, is it not, in the issuance of these rules?

A. To give them something that they can conform to.

Q. If an engineman were operating a train in a manner [fol. 5226] different than that which is set forth in the rule book and an accident happened and it was shown that he was operating his engine differently than the rule book prescribes, he would be subject to discipline, wouldn't he?

A. No, the rules are flexible enough to permit of the bridge braking that I explained. It states very clearly on page 9 that the operation depends to such an extent on various conditions that were explained in the previous paragraph, that no fixed rule could be established.

Q. That has to do with the time in which the engineer's valve handle should remain in release position, doesn't it?

A. It has to some extent but there are other factors in there as well.

Q. That rule that you referred to reads, "The length of time to leave the handle in release position to effect a release of all brakes and yet avoid overcharging, depends to such an extent on the conditions just explained, the length of the brake pipe and the main reservoir volume, that no fixed rule can be established." That is referring to the length of time that the handle should be left in release position, is it not?

A. Yes, but I would suggest that we don't lose sight of [fol. 5227] the fact that we have to release brakes while trains are in operation. We release brakes while trains are running as well as standing.

Q. And the time that you must leave that handle in release position is affected by the length of the train, isn't it? In other words, as this rule says, by the length of the brake pipe?

A. Yes, that is what it says.

Q. That is true, isn't it?

A. In operation there always becomes the question of whether you want to recharge your train or whether you want to release brakes.

Q. Coming back to my question—

A. Perhaps I didn't get the question.

Mr. Strouss: I will restate it.

Q. The length of time the handle of the engineer's brake valve is to be left in release position is affected by the length of the train, or in other words, the length of the brake pipe as the rule there states?

A. Yes, if you want to recharge the train.

Q. These rules — no place set forth the bridge method of braking as you have described it, do they?

A. No, they do not, nor do they object to it.

Q. There is no place in the rules where that method is described?

[fol. 5228] A. Or that term is used, no.

Q. Nor the method of braking without using the term "bridge method"?

A. No, it is not described in the rules.

Q. In your bulletins which are issued as a part of the timetables, do you know of any bulletin with respect to the operation of air brakes where that method of braking either by name or by description of method is set forth?

A. No, but let's go back—

Q. (Interrupting:) I am just asking you whether that is the situation?

A. I will answer, no.

Mr. Strouss: That is all.

Redirect examination.

By Mr. Mason:

Q. Do you know of any bulletins or instructions issued otherwise forbidding the use of the bridge method as you have described it?

A. Absolutely none.

Q. You were about to refer in the course of your answer to counsel's question when you were interrupted to something in the air brake book which you had in mind, perhaps contemplating the use of some other methods besides those

[fol. 5229] specifically described. Have you some part of the air brake book in mind?

A. I had in mind the permission to handle the brakes as I have described as bridging. It appears in the first paragraph on page 9 of the air brake book, "With a large capacity feed valve the brake valve handle should be held in release position not to exceed 25 seconds when releasing brakes only is the object." The object is not to release the brakes; the object is to build up a little pressure on the head end and permit the operation of the release of the brakes on the head end of the train and less than 25 seconds can be used under that rule, and that is what we do, we use less than 25 seconds.

Q. That is why it reads "not to exceed 25 seconds"?

A. That is why that rule was put in there and I will not say that second hand because I made that rule.

Q. Will you say whether or not as road foreman of engines you have a duty and responsibility to instruct engineers how to handle their trains in your territory?

A. Yes, that is my business.

Q. Is this bridge method as you have described it in common use by engineers under your supervision on the Coast division?

A. It is in the territory where bridge braking is advisable.

Q. Was it in common use on the Salt Lake division when you were there?

A. No, it was not. We didn't have that particular type of territory to handle the trains over.

Mr. Mason: That is all.

Recross-examination.

By Mr. Strauss:

Q. This 25 seconds' provision that you referred to, I believe that reads, "With a large capacity feed valve the brake valve handle should be held in release position not to exceed 25 seconds when releasing brakes only is the object." Then there is an exception. The exception is, "The exceptions to this rule are when charging the brake system and braking on grades under all conditions."

A. Yes.

Q. These rules are given to the enginemen, are they not, as a guide to be used in their work?

A. Yes, subject to interpretation.

Q. Yet neither in the rule book itself nor in any rule or [fol. 5231] bulletin is the bridge method set forth?

A. No; yet there is no objection to its use. The rule is made flexible so it can be used.

Mr. Strouss: That is all.

Mr. Mason: It is your duty as road foreman to interpret and apply these rules to the conditions that confront you on your division, is it not?

A. Yes, sir.

Mr. Mason: That is all.

(Witness excused.)

The Court: The Court will stand at recess until 2 P. M.

(Thereupon the Court stood at recess until 2 P. M., April 30, 1941.)

[fol. 5232]

2 P. M., April 30, 1941.

All parties being present as heretofore noted, proceedings were resumed as follows:

The Court: Before you start, gentlemen, may I ask the attorneys for the State if the exhibits Nos. 378, 379, 380, and 381, being the compilation of tables purporting to show the results of tests which illustrate the brake equipment, were those all taken from exhibit No. 206?

Mr. Strouss: Yes.

The Court: In that connection was exhibit No. 377 which purports to be a tentative order of the Interstate Commerce Commission as to the specifications and requirements for brake equipment also taken from the same volume?

Mr. Strouss: Yes.

The Court: The word "tentative" is used there. Ultimately was an order issued that was identical with this that is included in No. 377?

Mr. Strouss: No, I don't think so. I think what happened, and I think counsel will agree, that the Association of American Railways adopted the specifications in 1933 which became the rules of interchange and that specifica-

fion having been adopted the Interstate Commerce Commission has never issued any order fixing any specifications.

[fol. 5233] Mr. Booth: It may be somewhat outside the record but there were a great many tests and experiments made between the time the making of this report by Harley Johnson and the adoption of those specifications in 1933, but there is no connection between the specifications in 1933 and that report. The specifications of 1933 so far as anything before the Court is concerned are not based on that report.

The Court: Counsel furnished the information the Court desired. I just wanted to be sure I understood what the exhibits purported to be. You may proceed.

JOHN H. MENZIES was called as a witness in behalf of the defendant and being first duly sworn testified as follows:

Direct examination.

By Mr. Mason:

Q. Will you state your name, please?

A. John H. Menzies.

Q. What is your residence?

A. Tucson.

Q. Are you employed by the Southern Pacific Company?
[fol. 5234] A. Yes, sir, road foreman of engines, Tucson division.

Q. How long have you been road foreman of engines on the Tucson division?

A. Since July 1, 1940.

Q. Between what points does your jurisdiction, as road foreman extend?

A. From Lordsburg, El Paso, to Yuma, Arizona, and branch lines between those points.

Q. You mean Lordsburg, New Mexico?

A. Lordsburg, New Mexico, and Yuma, Arizona.

Q. Does it include all the lines of the Tucson division?

A. The north line, Lordsburg to Tucson, and all lines west of Tucson to Yuma.

Q. It does not include the line between Tucson and Douglas?

A. No, sir.

Q. What was your position prior to being appointed road foreman of engines?

A. I was fireman on the Tucson division from October, 1909, promoted to engineer in December, 1916.

Q. Had you served as engineer from December, 1916, until you were appointed road foreman of engines last year?

[fol. 5235] A. Practically all of that time, yes, sir.

Q. Or as fireman and engineer?

A. Fireman and engineer all the time.

Q. Do you hold seniority as fireman and engineer or both on the Tucson-Rio Grande seniority district?

A. Yes, sir.

Q. Dating as engineer from 1916?

A. Yes, sir.

Q. You were present in the courtroom this morning when Mr. Fifield testified?

A. Yes, sir.

Q. You heard his description of the general duties of a road foreman of engines?

A. Yes, sir.

Q. Do you perform generally the same duties with respect to the engineers and enginemen generally and the motive power on the Tucson division?

A. Yes, sir, they are the same duties practically.

Q. Do you as road foreman of engines ride in freight and passenger trains?

A. Yes, sir.

Q. Where do you ride?

A. Mostly on the engines.

Q. Do you ever ride in the caboose?

[fol. 5236] A. Occasionally I ride on the caboose.

Q. When you ride in the engine do you ever operate the engine?

A. Yes, sir.

Q. In the same way that you formerly did as engineer?

A. Yes, sir.

Q. Can you state whether or not in the course of your duties as road foreman of engines the mileage that you make in the average month is greater or less than that which you made on the average as engineer?

A. I don't keep time slips as I did when I was running an engine but I know that I put in as much or more mileage on this job as I did formerly.

Q. You recall that Mr. Fifield said he was out on the road riding trains about 23 days out of a month. Does that correspond to your experience?

A. It is very close to that.

Q. You have stated that you hold seniority over the Tucson-Rio Grande seniority district. Have you worked as an engineman, engineer, or fireman in all parts of that territory?

A. Yes, sir.

Q. Does that include the district between Lordsburg and El Paso?

[fol. 5237] A. Yes, sir.

Q. And between Yuma and Gila as well as Gila and Tucson?

A. Yes, sir.

Q. Have you also worked between Tucson and Lordsburg?

A. Yes, sir.

Q. As both engineer and fireman?

A. Yes, sir.

Q. Where did you work most recently as an engineer prior to your promotion as road foreman?

A. Between Yuma and Gila in the last six or seven years and regularly out of Yuma, between Yuma and Gila.

Q. In what character of service?

A. Freight service.

Q. In your service on this district have you handled trains of more than 70 cars as well as shorter trains?

A. Yes, sir.

Q. Have you handled so-called long trains in New Mexico?

A. Yes, sir.

Q. Did you handle any trains of more than 70 cars in Arizona during April, 1940?

A. Four trains between Gila and Yuma.

[fol. 5238] Q. Do you recall what the length of those trains was?

A. As I recall, April 12, 91 cars; April 14, 91; April 21, 91; April 28, I think was 94.

Q. Which direction were those trains handled?

A. Westward.

Q. Do you recall what sort of time you made with them, whether it was better or worse or different than the time that you generally make with 70 cars or less?

A. As I recall it was about the average time for westward trains.

[fol. 5239] Q. What in your experience has been about the normal time for westward trains of between 65 and 70 cars between Gila and Yuma?

A. Four hours and a half to five hours and a half, ordinarily.

Q. I think, Mr. Menzies, you were incorrect as to the date of your first 91-car train. You said it was the 12th; I think it was actually the 14th.

A. The 14th.

Q. And one on the 16th?

A. And one on the 16th.

Q. And what were the times from terminal to terminal of those trains, according to your own time return and delay reports?

A. On the 14th, four hours and forty-five minutes, on the 16th, five hours and thirty minutes, four hours and ten minutes on the 21st, and four hours and thirty-five minutes, I think it is, on the 28th.

Q. Mr. Menzies, do you recall whether, in the handling of these trains, there was any incident of any kind out of the ordinary, what you would regard as the ordinary course as an engineer?

A. No, sir.

Q. Will you say whether or not the handling was in any [fol. 5240] respect different from the handling of trains of seventy cars or less either before or after?

A. It was very much the same as any trip west with any train.

Q. Are you familiar with the type of air brake equipment on the locomotives in use in freight service in Arizona?

A. Yes, sir.

Q. Will you say whether or not such locomotives are equipped with the double compressors and double air reservoirs?

A. All our freight engines are equipped with double compressors excepting the small C type that are not used much in freight service any more.

Q. Are the C type used as the road engines?

A. In switching.

Q. They are used only in switching?

A. Yes.

Q. They are not used in main line service?

A. Very seldom.

Q. Have you had any experience in the control of freight trains on the grades in Arizona, to which reference has been made by plaintiff's witnesses, for example, the grade [fol. 5241] from Steins down to San Simon, or from Mescal or Dragoon down to Benson in either direction?

A. Yes, sir.

Q. Have you handled trains down those grades?

A. Yes, sir.

Q. Have you had any difficulty in your experience in handling such trains?

A. I have never had any difficulty in handling a train over that territory.

Q. Do you ride in the engine with engineers handling trains down those grades?

A. Yes, sir, quite often.

Q. Have you in such experience observed any difficulty on the part of the engineers handling them?

A. No, sir.

Q. You probably recall, Mr. Menzies, that the witnesses, particularly Mr. Stevenson, described the method of braking used in handling trains down these 1.4 per cent grades as the short cycle method. Now, in the handling, according to that method, down these grades, is the air in the train line all exhausted?

A. No, sir.

Q. Or should it be if the train is properly handled?

[fol. 5242] A. No, sir, that is right, it should not be.

Q. Are these grades, in your experience, sufficiently heavy to create this condition or bring it about?

A. No, sir.

Q. Now, in handling freight trains down these grades, which is the essential factor of the problem, the number of the cars in the train or the amount of tonnage in proportion to the number of operative brakes?

A. The tonnage per operative brake.

Q. Is there any device on the cars which enables you to secure additional control in the use of the short cycle method of grade braking?

A. Yes, sir, we have retainers on all freight cars.

Q. Does that assist you in the control of the train?

A. Yes, it adjusts and helps retain control.

The Court: Are those in use on any of the territory you have been operating in, these retainers?

A. We haven't used them because it hasn't been necessary to use them, but they are there if they need them.

The Court: Have you had occasion to use them in your [fol. 5243] territory?

A. Not in late years.

Mr. Mason: The engineer has a right to use retainers if he thinks he needs them for the purpose of controlling his train, does he?

A. Yes, sir.

Q. Now, in your experience, Mr. Menzies, does the adding of cars to the train let us say up to 100 cars make the control of the train impossible or impracticable upon any part of the main line in Arizona?

A. No, sir, it does not make it impossible.

Q. Does it create any condition differing from that which exists with the handling of trains, let us say of from sixty to seventy cars other than perhaps requiring the use of somewhat greater care by the engineer?

A. The engineer must use more care and it takes probably a little longer to start the train and also to stop it.

Q. From your standpoint and your experience, particularly your experience of last year, can you say whether or not the operation of long trains on Arizona's main lines is practical from the standpoint of the engineer in the engine?

A. Yes, sir.

[fol. 5244] Q. You heard the testimony of the opposing witnesses as to the control of trains leaving stops at certain points in grade territory where a rolling inspection at eight miles per hour is undertaken. Have you as an engineer or as road foreman of engines been present when such inspections were undertaken at points in grade territory?

A. Yes, sir, I have been out at all their sidings here.

Q. Will you state whether or not you have yourself experienced or seen any difficulties in connection with these inspections?

A. No, sir.

Q. That is your interpretation of the bridge method?

A. Yes, sir, the same as Mr. Fifield described to you earlier today.

Q. That is the method that you have instructed the engineers?

A. No, sir, they use that method. I do instruct them in the proper way of handling the air.

Q. What method do you instruct?

A. The long hold, where the grade is not severe.

Q. As set out in the rules?

A. Yes, sir.

[fol. 5253] Q. And the short cycle method as set out in the rules?

A. We really haven't any heavy grade braking here.

Q. You instruct them as to the long hold as set out in rule 18?

A. Yes, sir.

Q. That is rule 18, is it not (handing document to witness)?

A. That is right, light grade braking.

Q. You say that your enginemen do use the bridge method but you don't instruct them in that method.

A. I instruct them in not allowing themselves to get in trouble.

Q. Do you instruct—

Mr. Mason: (Interrupting) Let him finish, Mr. Strouss. You keep interrupting him. He has had three answers now cut off because you are so enthusiastic.

Mr. Strouss: Had you finished with your answer?

Mr. Mason: Let's have the prior question read.

(The record was read by the reporter.)

Mr. Strouss: I hadn't intended to cut the witness off.

[fol. 5254] The Court: Go ahead, Mr. Strouss.

Mr. Strouss:

Q. Had you finished your answer?

A. Yes.

Q. Do you instruct in the bridge method?

A. I instruct them in the long hold where they are doing light braking.

Q. That is the method that is set up in rule 18?

A. That is light grade braking.

Q. Light grade braking as set out in rule 18?

A. Yes, sir.

Mr. Strouss: That is all.

Redirect examination.

By Mr. Mason:

Q. I take it when you instruct them in the use of light grade braking under rule 18 you instruct them how to use that method in confronting the conditions they were actually confronted with?

A. Yes, sir, to keep the train stretched to avoid any slack action.

Q. Do I understand that your definition of the so-called bridge or modified long hold method involves any departure from rule 18?

A. No, sir, it is just a modification of that rule.

[fol. 5255] Q. Is there anything in any rules of instructions, written or unwritten, that you know of which tells you that you may not use this modification or adaptation of rule 18?

A. No, sir.

Mr. Mason: That is all.

Recross-examination.

By Mr. Strouss:

Q. These rules I take it are given to the men to be followed, isn't that true?

A. As Mr. Fifield explained they are flexible. Judgment and care must be taken into consideration in the handling of a train.

Q. Of course the engineman or the trainman as the case might be is at liberty to use his own judgment in any case whether that particular rule might be followed?

A. If a man does not show judgment before he is promoted, he very seldom becomes an engineer.

Q. After he has shown that judgment and becomes an engineer then he is promoted and can use his own judgment?

A. Within the rules, yes.

Q. Of course you have to have the brakes off to make a proper inspection, don't you?

A. That would only be on brakes applied. The rolling inspection could be made except the brakes released on [fol. 5249] certain cars.

Q. A proper inspection which would include an inspection to determine whether any of the brakes were sticking could not be made if you had the brakes applied, could it?

A. No, but that is braking territory and they would be braking all the way down there anyhow.

Q. If you were attempting to hold a train with the engine brakes of course that might be possible if the weight of the train were not too heavy?

A. Yes, if it wasn't too heavy.

Q. And the length of the train would affect the weight of the train?

A. The weight of the train would affect it.

Q. Where you are not using the train brakes, the more cars you have on behind that engine the more weight you put on the engine brakes?

A. That is right.

Q. You of course are familiar with the air brake rules and regulations?

A. Yes, sir.

Q. You are required to acquaint yourself with these and to pass an examination on these rules?

A. Yes, sir.

Q. That is true of all enginemen?

A. Yes, sir.

[fol. 5250] Q. These rules are your guide or the guide of the enginemen in operating a train?

A. Those are clear instructions.

Q. What is said in here concerning smooth train handling, has that been in accord—

A. There is a lot in there about train handling.

Q. I will read you some of it: (Reading) "Smooth train handling depends on the ability to control the slack and how to prevent it from running in or out harshly. Where so controlled, no draft gear in fair to good condition will be damaged. Slack action cannot be prevented, but by acquiring knowledge of the various causes for it, and exercising forethought in the use of steam, train brakes, independent engine brake and sand, it can be controlled, even to the

extent of avoiding further injury to damaged draft gear. The heavier the engine and the longer the train the greater is the care required." Do you subscribe to that?

A. Yes, sir.

Q. On page 11, "An automatic brake application will cause the brake pipe pressure to reduce faster at the head end of the train than at rear. This results in the head brakes applying in advance of those at the rear, and tends [fol. 5251] to bunch the train and compress the draft gears. In releasing, the head brakes commence so much before those at the rear that, as far as holding power is concerned, they are practically off before the rear ones start to release, causing the slack to run out rapidly." Has that been your experience?

A. Not the slack running out rapidly, no, because the way they brake the trains now they overcome a lot of that.

Q. How is that overcome now?

A. The long hold or the modified long hold or bridging as Mr. Fifield described it.

Q. Do you find in your rules any rule which covers the bridging method?

A. No, but there it a rule for the long hold and the bridge is really a modification of that, that is all.

Q. There isn't anything in your bulletins covering that method of braking either, is there?

A. No, but we do instruct our men to handle them that way.

Q. You do on this division?

A. They handle them that way and have very good results.

Q. Do you instruct your men on this division to handle them that way?

[fol. 5252] A. That is part of my duty, to instruct them in the proper manner.

Q. What enginemen on this division have you instructed to handle their trains with the bridge method of braking?

A. It is not a bridge method. It is a bridge modified long hold is what I would say, the releasing of the head brakes and allowing the train to be stretched where there is no slack. The releasing of the brakes on the head end, keeping the train stretched to avoid this run-out of slack because we work a little steam drifting throttle.

Q. That is the method that you have instructed?

A. That is the method we use.

Q. Is it possible for the engineer to hold the train to the speed necessary to permit the inspection to be made?

A. Yes, he can hold it to that speed.

Q. Now, referring to the matter of emergency stops of freight trains, have you yourself experienced occasions where you made an intended emergency stop of a freight train which you were operating?

A. Yes, I recall one time of making an emergency stop on a freight train.

Q. Do you remember when that was?

[fol. 5245] A. No, I can't tell the exact time, the date, but it was between Phoenix and Yuma, a station called Tolleson.

Q. Now, you have been an engineer since 1916. Is that the only occasion where you made an intended emergency stop with a freight train?

A. That is the only one I recall.

Q. Have you been on the engine with other engineers when intended emergency stops of freight trains were made?

A. No, sir.

Q. Reference was made in the testimony of the opposing witnesses also to the duties of the engineer to look back along the train in order to keep it under observation as the train was running. Have you performed that duty when you were running, as engineer?

A. Yes, sir.

Q. Will you say, approximately, what the limit of vision is, in your experience, from the engine back along the train?

A. Well, I would say that I could watch a train fairly good sixty cars from the engine. It wouldn't be a very accurate observation, but at least, you could see any real emergency.

Q. Do you have any bad weather conditions in Arizona [fol. 5246] that interferes to a large extent with observation of this kind?

A. No, sir; occasional sandstorms would be about all.

Q. You were present when certain of the witnesses testified as to slack action?

A. Yes, sir.

Q. And to some extent as to casualties. In your experience as fireman and engineer, have you ever been on a train

where a reportable casualty was occasioned by reason of slack action?

A. I don't recall any.

Q. You recall also testimony with reference to the use of conductor's valve at the caboose. Have you ever had the conductor's valve used while you were operating the train as engineer?

A. I think so, but I can't recall the times.

Q. Has the use of the conductor's valve on the trains that you were operating resulted in any injury to any member of the engine crew?

A. No, sir.

Q. Or any person on the engine?

A. No, sir.

Q. Mr. Menzies, from the engineer's standpoint in making a good run with the least trouble and delay and the least fuel consumption, which would be better, a run with [fol. 5247] a number of stops for meets and passes and inspections or a run with comparatively few stops and few meets?

A. The fewer stops the better the engineer likes it, and the less stops the less brake application, the less chance for brakes to be sticking, hot wheels and so forth.

Mr. Mason: That is all. Thank you, Mr. Menzies.

[fol. 5248]. Cross-examination.

By Mr. Strouss:

Q. Mr. Menzies, these trains that you were on on the 14th, 16th, 21st, and 28th of April I think the time return and delay reports show those trains to be consisted as follows: 1 load and 90 empties, is that right?

A. I think that is correct, yes, sir.

Q. The one on the 16th was 1 load and 90 empties?

A. Yes, sir.

Q. The one on the 21st was 1 load and 90 empties?

A. Yes, sir.

Q. The one on the 28th was 2 loads and 92 empties?

A. Yes, sir.

Q. I believe you said you never had any difficulty in holding a train for inspection on grades. The grade around Sibyl is about 1.4?

A. From Sibyl down to Benson westbound is about 1.4.

Q. If he used his own judgment and adopted a method which is different from the rules and it resulted in an accident of course he would not be disciplined because he had used his own judgment?

Mr. Mason: I object to the question, it assumes facts not in evidence and is based upon a distortion or misunderstanding of what the witness has testified to. It is obviously not proper cross-examination.

The Court: Objection overruled.

Mr. Strouss: Will you read the question, please?

(The question was read by the reporter.)

A. If his judgment got him into trouble he would probably be disciplined.

Mr. Strouss:

Q. Then it would be a matter of his superiors determining whether his judgment was good judgment?

A. He has the rules that he must live up to. He cannot just ignore the rules.

Mr. Strouss: That is all.

(Witness excused.)

[fol. 5257] B. S. SINES was called as a witness in behalf of the defendant and having been previously sworn testified as follows:

Direct examination.

By Mr. Mason:

Q. Mr. Sines, you will recall that during the testimony of Mr. Cheek reference was made to his having handled two passenger trains of more than 14 cars during April, 1940?

A. That is right.

Q. Have you prepared photostatic copies of the conductors' time returns and delay reports covering those two trains which are to be submitted in lieu of the original time returns and delay reports, exhibits Nos. 321 and 322?

A. I have.

Mr. Mason: We offer these photostatic copies in lieu of the documents previously received as exhibits Nos. 321 and 322.

The Court: If there is no objection, they may be received and the original exhibits released and these substituted in lieu thereof.

Mr. Strouss: I have no objection to the substitution. I don't remember whether I objected—

[fol. 5258] Mr. Mason: You insisted on them being here.

Mr. Strouss: Then I hardly object to it.

Mr. Mason:

Q. Mr. Sines, I show you a document entitled, "Consist Train No. 3 Departing Tucson April 12, 1940, Conductor G. Shaw, Engineer B. Check." Have you that before you?

A. I have.

Q. Did you have this exhibit prepared?

A. I prepared it.

Q. From what sources and what is it?

A. This is a photostatic reproduction of the passenger conductor's car report, form CS-1213, covering the operation of train No. 3 on April 12th with conductor Shaw and engineer Check.

Q. Is this the same train that is covered by exhibit No. 321?

A. Yes.

Mr. Strouss: Pardon me, I wonder if I have the right copy here. Mine says "train No. 44."

Mr. Mason: You have the wrong one then. That comes next.

Q. You have added certain notations on this exhibit, have you, Mr. Sines?

A. That is right. The figures appearing at the bottom are derived from the information which the conductor placed on the form in the columns which are headed "Initial," "Number," "Engineer," "From," "To," "Miles." By analyzing the particular territory over which each of those cars operated it will be found that the number of cars in the train arriving and departing at El Paso, Tucson, Phoenix, Arlington, Yuma, and Los Angeles are as shown on the bottom of the exhibit.

Q. Is this form CS-1213 a record of the run of this train from El Paso to Los Angeles?

A. It is the record regularly made by the conductor of every passenger train operated and it is the particular

[fol. 5267] Q. Now, is this furnished in response to the suggestion of opposing counsel and the undertaking by defendant's counsel?

A. Yes. We have also checked these against the specifications which Mr. Strouss mentioned as having been furnished by Mr. Browning.

Q. And does this agree with those specifications furnished by Mr. Browning to Mr. Strouss?

A. Yes, sir.

Mr. Mason: Have you any questions?

Mr. Strouss: No.

The Court: Mr. Sines, is this exhibit which has been marked for identification comparable to Exhibit 377 on the part of the State? I mean by that, is the previous exhibit 377, did that ultimately ripen into this order that appears here, the specifications in this exhibit?

A. I don't think I could answer that.

Mr. Strouss: One is the order of the Interstate Commerce Commission, this is the Rule of the American Railway Association.

Mr. Mason: This, your Honor, is what was actually adopted by the Association by a letter ballot and the approving vote of its members in 1933. The Interstate Commerce Commission's tentative order was issued in 1924.

[fol. 5268] The Court: I see.

Mr. Mason: And there were intervening proceedings, some of which have been mentioned and some of which have not been mentioned by opposing counsel and ourselves.

The Court: I see.

Mr. Mason: Do you understand that as being correct, Mr. Sines?

A. I confirm what you say as to their having been adopted by the A. A. R. in 1933. I am not familiar with No. 377.

Mr. Mason: No. 377 is an excerpt from the Harley-Johnson report, which reproduces the Interstate Commerce Commission's tentative order of 1924 in the case entitled, "Power Brake Investigation."

The Court: That is correct, according to the original exhibit which I have here.

Mr. Mason: The tentative order, as I understand it, is already in evidence without objection as a part of the

pamphlet copy of the Interstate Commerce Commission's decision in the power brake investigation. You remember that a pamphlet copy was offered in evidence by Mr. Strouss. I have forgotten the number of the exhibit—385, I think.

[fol. 5269] Mr. Strouss: It is right along in there; it is after this 377, I know that.

Mr. Polley: 385; that is right.

Mr. Booth: To avoid any misunderstanding, I would like to have it in the record that there is absolutely no connection, so far as the record is concerned, between this exhibit the witness has just identified and anything in the Harley-Johnson report.

Mr. Strouss: I am not stipulating to anything of the sort.

Mr. Booth: That is a fact. A comparison will show it.

Mr. Strouss: We will argue the record when we get to it.

Mr. Mason: Now, Mr. Sines, I think you said this was adopted by the A.A.R. Wasn't it adopted by the members of the American Railway Association by a special vote of the membership?

A. That is right.

Q. And submitted to them for their approval by the Mechanical Division?

A. Yes.

Q. As a proposal for adoption?

A. Yes.

Mr. Mason: I don't know that the exhibit has been offered [fol. 5270] but it is now offered as No. 396.

Mr. Strouss: I would like to ask Mr. Sines a question.

Q. Are you a member of the American Railway Association, or were you and are you now a member of the Association, the Association of American Railways?

A. No.

Q. Or of any committee?

A. No.

Q. Or any division?

A. No.

Q. How do you know how this was adopted?

A. In introducing this exhibit, I explained that I had received these specifications from our mechanical department, and my inquiry to them was to furnish us specifications which are mentioned in the A.A.R. code of interchange rules

Q. Have you the original time returns and delay reports and the time registers available in the courtroom?

A. Yes, also the time book. Did you ask me if I had the register?

Q. Yes.

A. Yes.

Q. And you have the time book as well?

A. Yes.

Q. I notice you show here a heading "Miles or Equivalent Miles." What is the meaning of "equivalent miles"?

A. In computing miles operated by employees who are in mixed service, that is, freight and passenger both, the miles operated in passenger service are reduced by one- [fol. 5264] third to equate them to miles operated in freight service, then the two figures are added together to produce one mileage figure.

Q. Then the figure, for example in line one, column C, will represent the miles that Mr. Ash had run if all the service had been in freight service, equating the passenger-miles to freight-miles at the one-and-a-half to one basis?

A. That is right.

Q. Is the same explanation true as to all of the other equivalent miles here?

A. Yes. There is the further feature also that dead-heading is paid for, I think it is 100 miles per trip.

Q. Well, the deadheading is paid for on a basis less than your full mileage bears?

A. Yes.

Q. And if there are run-arounds, they are paid for on the full basis of miles?

A. Yes, sir.

Q. Are the payments included in here on the basis of the miles to show their equivalent?

A. Yes, sir.

Q. This is taken from the timebooks and time register? [fol. 5265] A. That is right.

Q. Do you know, and, if so, will you state whether the conductors register their individual miles?

A. I don't know whether they are following that practice right now or not, I know that they did not very long ago, and they did it for several years, particularly during the depression years.

Q. Do you recall the testimony of Mr. Fail to the effect that there was a monthly mileage limitation on conductors, 3800 miles, or their equivalent.

A. He mentioned 3800 miles, yes.

Mr. Mason: Have you any questions, Mr. Strouss?

Mr. Strouss: No questions.

Mr. Mason: Has your Honor any question?

The Court: No questions.

Mr. Mason: We offer the exhibit as defendant's Exhibit No. 395.

Mr. Strouss: No objection.

The Court: It may be admitted.

(The document referred to was received in evidence and marked, "Defendant's Exhibit No. 395.")

The Court: Mr. Mason, just what is the purpose of this particular exhibit?

Mr. Mason: Well, you remember that I asked Mr. Ash [fol. 5266] and Mr. Fail and I think Mr. Shaw, about the extent of the service that they had rendered. Mr. Fail was willing to say that he worked pretty nearly full time, but he didn't know how much, and I also asked him if it hadn't all been in long-train territory. I want to show by this that these star witnesses for the opposition, worked several thousand miles apiece in this supposedly dangerous territory.

The Court: I see.

Mr. Mason: Mr. Sines, have you before you a statement, apparently a photostatic copy, in six pages, the initial page of which is entitled, "American Railway Association, Mechanical Division, Specifications for Freight Brakes, Standard, Adopted 1933."

A. Yes.

Q. Consisting of six sheets which are numbered at the foot E-55, E-56, E-57, E-58, E-59 and E-60?

A. That is right.

Q. From what source did you prepare this exhibit?

A. These are from specifications which were furnished us by our mechanical department which specifications are the ones referred to in the A. A. R. Book of Interchange Rules.

report of conductor Shaw for the operation of train No. 3 on that date.

Q. Does this correspond to the form 1216 for freight trains?

A. It does.

Q. This is one of a group of original records which you have for this particular period, is it?

A. That is right.

Q. Do I understand that this is an actual photostatic reproduction of the original?

A. It is.

Q. Will you state the purpose of this exhibit, having in mind exhibit No. 321?

A. Exhibit No. 321 indicates there were 16 cars out of Tucson and 15 cars out of Phoenix. The exhibit we are [fol. 5260] offering indicates the same information for the same territories but in greater detail.

Mr. Mason: We have not yet had the exhibit marked and I should like to have it marked with the number next in order.

The Court: It may be marked for identification.

The Clerk: Defendant's exhibit No. 393 for identification.

Mr. Mason: I will now offer it in evidence.

Mr. Strouss: No objection.

The Court: It may be admitted.

(The document referred to was received in evidence and marked "Defendant's Exhibit No. 393.")

[fol. 5261] Mr. Mason: Now, will you take up, please, the statement entitled "Consist Train No. 44, Departing Yuma, April 13, 1940." Have you that before you?

A. I have.

Mr. Mason: May we have this exhibit marked No. 394 for identification?

The Court: It may be marked.

The Clerk: Defendant's Exhibit No. 394 for identification.

Mr. Mason: Did you prepare No. 394, Mr. Sines?

A. I did.

Q. Was this prepared in the same manner as No. 393?

A. The same.

Q. And from the corresponding original form 1213?

A. Yes, sir.

Q. And the notations at the foot of the sheet, are those your own?

A. They are.

Q. Is this a companion of Exhibit 322?

A. It is.

Q. And has a purpose similar to that of No. 393?

[fol. 5262] A. That is right. I want to call attention to the fact that Exhibit 322, containing a reproduction of the conductor's time return and delay report does not show the number of cars in the train departing Phoenix and arriving Tucson, it merely shows the number of cars, 13 departing from Yuma. The train, however, had 15 cars between Phoenix and Tucson, as shown at the bottom of Exhibit 394.

Mr. Mason: We offer No. 394 for identification in evidence, with that number.

Mr. Strouss: It may be admitted.

(The document, referred to was received in evidence and marked, "Defendant's Exhibit No. 394.")

Mr. Mason: Now, Mr. Sines, have you before you a statement in one sheet entitled, "1940 Service Records of Conductors A. T. Ash, L. A. Fail, and E. V. Shaw?"

A. I have.

Mr. Mason: May we have this statement marked Defendant's Exhibit No. 395 for identification?

The Court: It may be marked.

The Clerk: Defendant's Exhibit No. 395 for identification.

Mr. Mason: Did you prepare No. 395, Mr. Sines?

[fol. 5263] A. I directed its preparation and have checked it.

Q. From what sources was it prepared?

A. This exhibit was prepared from the conductors' time return and delay reports for the year 1940 covering all of the service of the three conductors named, checking the time with the individual time return and delay reports against the time register for those same conductors to make sure that we had all of the service in both instances.

as being the specifications of 1933. They furnished me the same documents that Mr. Browning furnished you, and looking at the face of the exhibit here, the printing on the original document, it says, "Adopted 1933."

Q. It doesn't say how it was adopted?

A. I have also seen a publication of the A. A. R. My [fol. 5271] recollection is hazy at the moment, mentioning—

Q. You say A. A. R. Do you mean the A. A. R. or A. R. A.?

A. In 1933 it would be the A. R. A. Now, my exact knowledge as to how this thing would be adopted is my familiarity with the working of the A. A. R. and the A. R. A., and I know when such things are adopted it is done by letter ballot.

Q. How did you happen to be familiar with the workings of those organizations?

A. Well, the A. R. A. and the A. A. R. published annuals of accepted practice, which are, I suppose, to the engineering profession what the legal handbooks are to lawyers, particularly to the railway engineers. They have recommendations in there as to sizes of spikes, and ties, and rails, and tie plates, and when I went to work for the railroad and before I went to work for the railroads in 1920 and '21, when I was in the university taking civil engineering, the A. R. A.'s accepted standards were a reference work in our library, and I found out at that time by reading through those books and pamphlets how those things are adopted, and since then, of course, I have checked them a number of times.

Mr. Mason: No doubt your Honor has in mind the testimony [fol. 5272] of the witness Browning to the effect that where a change is to be made, it is submitted to the membership for a vote, and must be adopted by vote.

Mr. Strouss: And their standards are accepted as standards, their recommendations are accepted as standards?

A. Well, it is always with this understanding, that a group of men have gotten together and have agreed that such and such a practice is a good common standard, but it doesn't bind any member to follow that standard. As an engineer, when I was working in the Engineering offices in El Paso, and a new problem came up I would always refer to the handbook to find out what the A. A. R. recommended practice

was, and then make up my mind what I was going to do. I might follow their recommendations or I might not.

Mr. Strouss: That is all. No objection.

The Court: It may be admitted.

(Thereupon, the document referred to was received in evidence and marked, "Defendant's Exhibit No. 396.")

Mr. Mason: Now, Mr. Sines, have you before you a statement in one sheet entitled, "Delays to Freight and Passenger Trains Associated with Equipment or Defects therein,"—

A. I have.

Q. —"as Reported by Conductors on Time Returns and Delay Reports, January 1, to June 30, 1940, Lordsburg, New Mexico, to El Paso, Texas."

A. Yes.

Mr. Mason: May we have this statement marked No. 397 for identification.

The Court: It may be marked.

The Clerk: Defendant's Exhibit No. 397 for identification.

Mr. Mason: Did you prepare No. 397, Mr. Sines?

A. I directed its preparation, have checked it, and have done about half the work myself, yes, sir.

Q. Now, lines 1 to 24, inclusive, from what sources were they prepared?

A. From an examination of the conductors' time return and delay report, particularly the delay report section on the back of the report where the conductors note occurrences or unusual occurrences causing delay to their trains.

Q. Now, did you use the language or substantially the language of the conductors themselves in setting up these [fol. 5274] items 1 to 24 inclusive?

A. Generally, that is a fact. In establishing a classification in the first instance, I was guided by the code causes issued by the Interstate Commerce Commission in connection with classification of equipment defects, and wherever possible, I fitted the conductor's notation of occurrences into those code causes of equipment defects. In many cases, however, the conductor's notations were not specific enough, or they were too brief, to identify accurately with anyone of those code causes, and in that event I used the words of the conductors. I refer particularly to Item 13 and Item 12.

Q. Those are what the conductors said about the situation?

A. That is right. Now, Items 21 and 22 may not be the exact words of the conductor, but I found no difficulty in translating the conductor's language into the items which I have noted here as 21 and 22.

Q. Now, as to Items 26 to 30, inclusive, from what source were they taken?

A. They are taken from information supplied by our auditor of equipment service accounts for the six months' [fol. 5275] period as a result of a special request which I made upon him.

Q. Was this a special check of the wheel reports for the freight and passenger trains operated in that territory during that period?

A. That is right, it requires an inspection of every individual wheel report in order to produce the figures which I have in this exhibit.

Q. Did you yourself make a special check of the underlying sources to determine the number of freight trains of seventy cars and less, and over seventy cars, and the number of short passenger trains?

A. Yes, I made a count off the dispatcher's train sheets which I used to check the information which I received from the auditor of equipment service accounts.

Q. In segregating these occurrences in lines 1 to 25 inclusive, as between short and long freight and passenger trains, how did you make that segregation?

A. By the information appearing on the face of the conductor's time return.

Q. I take it that the addition in line 25 is your own?

A. That is right.

Q. What as to the computation which appears in lines [fol. 5276] 29 and 30?

A. Those are my computations also. The information in line 29 is obtained by dividing the figures in line 28 by the totals in line 25. The information in line 30 is determined by dividing the figures in line 28 by the figures in line 27.

Q. Have you checked the exhibit to determine whether or not it is true and correct?

A. I have.

Q. Will you state whether it is true and correct and in accordance with the underlying sources?

A. It is.

Q. Are the time returns and delay reports and the train dispatcher's train sheets available in Tucson?

A. They are in Tucson, yes.

Q. And I think you stated that the data as to car-miles and train-miles was a special study at San Francisco?

A. That is right.

Mr. Mason: Will you require that to be verified, Mr. Strouss?

Mr. Strouss: No, I have no objection.

Mr. Mason: Have you any questions?

Mr. Strouss: No.

[fol. 5277] Mr. Mason: We offer the exhibit in evidence as No. 397.

Mr. Strouss: No objection.

The Court: It may be admitted.

(Thereupon, the document referred to was received in evidence, and marked "Defendant's Exhibit No. 397.")

Mr. Mason: That is all we have now, your Honor.

The Court: Well, we will take our mid-afternoon recess.

(Thereupon, a short recess was taken, after which proceedings were resumed as follows:)

[fol. 5278] The witness Sines resumed the witness stand.

The Court: I understood you to say, Mr. Sines, that amongst the engineering profession that the reports and publications of the American Railway Association or its successor, the A. A. R., were considered standard publications?

A. The Manual of Recommended Practices.

The Court: Referring particularly to plaintiff's exhibit No. 206, being this volume here, is that considered a standard publication amongst the engineering profession?

A. No, sir, that is in an entirely different category.

The Court: That is all.

Mr. Mason: Do you have any questions of the witness on these exhibits?

Mr. Strouss: No, I have no questions.

(Witness excused.)

Mr. Polley: Your Honor, I have in my hand a document entitled, "Interstate Commerce Commission, Report of Di-

rector of Bureau of Safety to the Interstate Commerce Commission for the Fiscal Year Ending June 30, 1940," and it bears on its face the imprint of the seal of the Interstate Commerce Commission and carries the notation, "United States Government Printing Office, Washington, 1940." I [fol. 5279] would like to have it marked for identification.

The Court: It may be marked.

The Clerk: Plaintiff's exhibit No. 398 for identification.

Mr. Polley: This exhibit should have been offered in our rebuttal but we didn't receive it until last night.

The Court: Permission will be granted to reopen.

Mr. Polley: We would like to offer in evidence that portion of the report beginning with the first paragraph on page 2 and extending through page 2 to the end of the third paragraph on page 4.

Mr. Mason: We object to the receipt of the report in evidence on the ground it is mere hearsay. It is not an official publication of the Interstate Commerce Commission. It is a report of the Director of the Bureau of Safety to the Commission. In other words, a report within the Commission by one of its staff to the Commission itself.

Mr. Booth: It is not shown that the Commission has adopted the report or acted on the recommendations.

Mr. Strouss: It is printed for publication.

[fol. 5280] Mr. Mason: It is no more than a newspaper article.

The Court: May I ask counsel for the State if there is any differentiation between this exhibit No. 398 which you now offer and the exhibits to which objection was made and which the Court has under advisement in connection with the excerpts from exhibit No. 206?

Mr. Strouss: There is quite a bit of difference. One is by the Director of the Bureau of Safety of the Interstate Commerce Commission, a report made by him to the Commission in his official capacity which is published by the Interstate Commerce Commission and distributed and it shows on its face it is a report which the Commission has authorized to be published and printed, and is printed. The thing is to show that it reports the action of his division during the year ending June 30, 1940. The parts we have referred to are the results of inspections made by the Interstate Commerce Commission inspectors under the jurisdiction of the Bureau of Safety and the other has to do with the report

of the number of cars which are equipped with this new type brake.

The Court: You mean this exhibit covers that feature? [fol. 5281] Mr. Strouss: Covers that feature. Your Honor will remember that under the rule of interchange it is required by the different carriers and private car owners that they file with the Interstate Commerce Commission, I have forgotten whether it is semiannually, but at different periods during the year a statement of their equipment equipped with the brake.

The Court: Mr. Strouss, having in mind the objection made, what the Court is concerned with is this, there has been accepted without question throughout this trial all of the orders, rules, regulations, and what not of the Interstate Commerce Commission, both sides have offered them and they have gone in sometimes with objection and usually without objection. Here is a report apparently—I haven't examined it—of one of their employees or officers, to wit, the Director of Safety, which they have seen fit to put out as an official publication of the Commission. However, from your statements I take it that it only purports to be the report of the Director of Safety and no order of the Commission has been entered adopting this.

Mr. Strouss: I don't know, I haven't looked at it myself [fol. 5282] carefully, but if your Honor will look at it you will see it is published under the authority of the Interstate Commerce Commission for public distribution.

The Court: It seems to me you have to have more than that. Supposing that they published an address such as is included in one of these exhibits, you would not contend that a court of record would have to admit it merely because it was put out under the official seal or authority of the Commission. I haven't examined it, I want to, but I just wanted to get your idea.

Mr. Strouss: It is the same as any other report. Of course the Commission acts through its agents the same as any other organization.

The Court: Have counsel examined it? Maybe they have no objection to it.

Mr. Mason: On the contrary, we have very serious objection to it. This is not a report of the Commission, it shows on its face that it is not. Reports of the Commission are distinct and can be readily identified. The statute requiring their reception in evidence where the seal of the

Commission appears upon them is specific in identifying the document so receivable as a report of the Commission. The documents which have been used without objection or have [fol. 5283] been received over objection have been reports of the Commission or excerpts therefrom. Exhibit No. 385 which was introduced is a report of a decision of the Commission. The document now before you identified as exhibit No. 398 for identification is merely a report submitted by Director Mills of the Bureau of Safety to the Commission. It requires the vote of six of the eleven members of the Commission to adopt something as the act of the Commission or the vote of two of the three members of a division where a division may act. There is no record herē whether the Commission has ever done anything about Mr. Mill's report. The annual accident bulletins are the bulletins of the Commission and are gotten out by the Commission itself. The decision in the power brake investigation case is an act of the Commission. The orders of the Commission requiring various kinds of reports to be submitted to it are orders of the Commission and usually say on their face, "At a general session of the Interstate Commerce Commission." There is nothing of the kind on the document now before you. The reports of accidents which are summarized in the annual accident bulletins are reports issued by the Commission itself, it is true prepared by the Bureau of Safety, but [fol. 5284] issued by the Commission. This is entirely distinct. It is not issued by the Commission. The fact that it is printed in the Government Printing Office is common to a great many other documents. There are a great many other documents printed in the Government Printing Office which could not be admitted here even though they bear the seal of the United States.

The Court: The Court will take this objection under advisement.

Mr. Mason: Before we close the record and in order that our position may be perfectly clear we file with the Court a formal request for the making of written findings of fact and conclusions of law in the case in accordance with the Arizona law, rules of practice.

The Court: It may be filed. Do I understand that the defendant rests on the surrebuttal?

Mr. Mason: Yes, your Honor, the defendant rests on surrebuttal.

The Court: No further witnesses?

Mr. Mason: No.

The Court: You have no further witnesses, Mr. Strauss?

Mr. Strauss: Mr. Hardwicke is to return to the stand but it should not take long.

Mr. Mason: It will take a very short time.

[fol. 5285] (Discussion off the record.)

Mr. Mason: Mr. Strauss, will you advise me whether or not the form T's that you propose to introduce for 1940 will include the form T's covering the Sorenson accident in Nevada, I think it was in December, 1940, and the Sickler accident at Indio on December 4, 1940?

Mr. Strauss: The Sickler accident I know.

Mr. Mason: The Sorenson accident was a fatal accident to a brakeman which happened at some point in eastern Nevada.

Mr. Strauss: Both of those will be put in.

Mr. Mason: It occurs to me if those form T's are put in evidence that from them we can, in briefing the case, make comments upon Mr. Hardwicke's selection just as readily as we can make the comments in cross-examining him and would probably have as much effect.

Mr. Strauss: They will be put in evidence.

(Discussion off the record.)

Mr. Mason: I think there is one point that has not been mentioned directly in connection with form 2611 that should be mentioned. The forms 2611 are now demanded only in connection with the Sickler accident and the fatality to brakeman Richards.

[fol. 5286] The Court: I wonder if Mr. Sines would be kind enough to loan me his copy of the Sickler report.

Mr. Mason: Yes, I have it here, your Honor. Now as to the Sickler accident, first that involved the loss of a leg by the brakeman who was injured on a train which had I think five or six brakemen besides other employees and Sickler was one of those brakemen. Naturally there were several forms 2611 submitted.

The Court: May I ask at that point is it the practice or custom of the defendant railroad to require a form 2611 from every employee who had any personal knowledge of the accident?

Mr. Mason: Sometimes we get them from employees who do not have any personal knowledge and it will say so

on the 2611. The 2611 is gotten primarily for the benefit of the general claims attorney so that if a suit is filed he will have knowledge of the circumstances and be prepared to defend it. It is obtained for the protection of the interests of the company against a suit arising out of the case. It is not filed merely where personal injuries are incurred by members of the crews or employees generally but in other cases where the company may be liable for a damage action. [fol. 5287] The Sickler case is particularly in point because a suit has been filed. We don't suppose that either Mr. St. Fouss or Mr. Polley would make any misuse of these 2611's but it is possible that they would drift into other hands and they could be used by the representatives of Sickler as the plaintiff in his suit against us and be very damaging to us in defending that suit. The Richards case is a similar case, a brakeman who was killed, and I understand that his widow or next of kin has filed suit under the Federal Employers' Liability Act and if these forms 2611 are taken from our possession they may well be availed of improperly by the opposition to our detriment, but they are obtained by us because we need them in our defense. Where there are several of them gotten, which of those is to be used by the opposition as a purported admission against interest, and if only one—say, the Sickler case is used, can we put in the balance. The authorities seem to indicate they would be merely self-serving declarations if put in by us. Therefore they could select the one they chose as the purported admission and we would be barred from using the others to combat it. The recent authorities dealing with these admissions [fol. 5288] for that information where demanded under rule 34 of the Federal rules of practice which is the counterpart of the Arizona rule are very definite in saying—

The Court: These authorities are set forth?

Mr. Mason: I am not sure that I have set forth the language, I have set forth the citation; it is Kenealy vs. Texas Company. This happens to be a particularly good case in point, 29 Federal Supplement, 502, a recent case decided in 1939, in which the demand was for all statements of fellow employees aboard the vessel as to the accident and the court said in discussing it, "This is understood to refer to statements made after the accident by other employees of the defendant regarding their knowledge of the facts relating to the accident. Statements of this kind plainly do not con-

stitute or contain evidence material to any matter involved in the action; they are not evidence but are at most merely memoranda available for use at the trial when the respective persons making the statements are called to testify. The plaintiff says that he should be permitted to have the statements in order that he may properly cross-examine the various witnesses as they are produced. This is substantially the argument advanced and rejected by Chief Judge [fol. 5289] Cardozo in *People vs. Supreme Court* and I do not think that it is even open under the language of rule 34." The demand was rejected. To the same effect are these other cases which I have cited. I think your Honor will find several other places in the memorandum.

The Court: May I ask counsel for the State this question, I take it it goes without saying that you gentlemen are in no wise interested in any of the actions that may be brought by these injured employees, but may I inquire why you singled out these two in which an action is pending?

Mr. Strouss: I didn't know until counsel just stated that there was an action pending. We singled them out because in the *Siekler* case—I am not particularly anxious for the 2611 in the other—but it is the *Siekler* case that I am more interested in because in that, on the form T, as I stated to your Honor yesterday the superintendent states that the statement of members of the crew indicated that there was no unusual handling of the train. I would like to see for myself and for the State what the employees actually did say upon the form 2611. That is why I asked for that form 2611.

The Court: I understand from counsel for the defendant [fol. 5290] that none of these 2611 forms covering these particular accidents are within the state of Arizona?

Mr. Mason: No, we had no anticipation of this demand or I think we would have certainly kept them here but they were sent away some time ago.

Mr. Booth: They are in the hands of our general claim agent who is in the law department, in his hands for the preparation of the case in San Francisco.

The Court: The Court has indicated it will rule on these matters at ten o'clock tomorrow morning. We will then be ready to complete this case providing the form T's are ready.

Mr. Strouss: They will be ready.

The Court: Then the Court will be at recess until 10 A. M. tomorrow morning.

(Thereupon the Court stood at recess until 10 A. M., May 1, 1941.)

[fol. 5291]

May 1, 1941, Ten o'clock A. M.

Proceedings were resumed at this time as follows:

The Court: Gentlemen, the Court indicated last evening that at the beginning of court this morning, I would rule on the various matters having to do with the admission of exhibits that I have had under advisement.

Now, with reference to the State's demand on the defendant to produce the forms 2611, described on the subpoena duces tecum served on Mr. Sines, while the authorities are somewhat in conflict on this point, the better-reasoned rule seems to be that such reports are confidential, and that the defendant should not be required to produce same, where, as here, timely objection is made. Furthermore, from the representations of counsel for defendant, it appears that these documents are not within the jurisdiction of the Court, and hence the Court would be without authority to order their production. It is, therefore, ordered that the motion to produce be denied, and the subpoena is ordered quashed, and I return that to you for your file.

Now, as to the excerpts from the report of the Director of the Bureau of Safety to the Interstate Commerce Commission, [fol. 5292] which the State has had marked as Exhibit 398 for identification, and it is now offered in evidence, to which an objection has been made; certainly this report doesn't have the dignity or status of an order of the Commission itself. It doesn't appear to have been approved by the Commission, and I do not recall that any such documents have been heretofore admitted in this case, and, deeming the objection well taken, it is ordered that the objection be sustained to Plaintiff's Exhibit No. 398 for identification.

I have read all of the authorities submitted by counsel in connection with these matters, and particularly with reference to Exhibit 206, marked for identification, and the various other exhibits, being excerpts therefrom, which

were offered as separate exhibits and marked for identification. Now, these exhibits were offered under two theories, first, that Harley A. Johnson was an agent of the defendant, and, second, that they were entitled to credit as independent evidence of the facts shown, the latter being an exception to the hearsay rule. Now, the Court is of the opinion that legally no agency has been shown to exist. The fact [fol. 5293] remains that this report was never even adopted by the A. R. A. or the A. A. R. The report is certainly hearsay and secondary evidence. Now, as to the second theory, I have no quarrel with the rule of evidence which permits the introduction of books of science or art or learned treatises, or tables of scientific calculation, and the like, as original independent evidence. The courts universally adopt a liberal view on these matters, but the Court does seriously question whether the contents of Exhibit 206 for identification, which includes these other exhibits, even remotely comes within these classifications. The question might well be, who is Harley A. Johnson? No one has testified that he is a recognized authority, nor has anyone shown that his tests have been universally accepted in the field of railroading. There would be no chance for cross-examination, and it seems to the Court that it would be hearsay. I might illustrate this by a case with which I know Mr. Strouss is familiar, that I once tried in Yavapai county, the Mine Tax Case. There, numerous eminent mining engineers took the stand and testified that the books entitled, "Principles of Mining," written by the Honorable Herbert Hoover was a recognized and authoritative text in that [fol. 5294] field, and this having been established, thereafter the Court permitted that treatise or book to be used throughout the trial; but it seems to the Court in this case that there has been a complete lack of any showing of the authenticity, particularly of the scientific standing of this exhibit. The record may therefore show that the exhibits No. 206, Nos. 329 to 333 inclusive, and Exhibits Nos. 371 to 381 inclusive, which have been heretofore marked for identification, that the objection to the introduction of these exhibits is sustained.

Mr. Strouss: Just that the record may be clear, there were two grounds, of course, that were discussed as a basis for our offer, but I don't want it to be taken that we have waived or abandoned our contention that counsel for the defendant at the time that this exhibit was identified waived

all objections except that it was improper cross-examination. We do contend that, and for the purpose of the record, I want that to be shown.

The Court: Well, the Court had that in mind, Mr. Strouss, in making the ruling.

Mr. Strouss: Of course, I don't want to argue after the Court has ruled. Aside from the matter of whether the [fol. 5295] contents of the reports were admissible, in so far as the statements or tables there, it does seem to me that, having in mind the character of this litigation, and under the law as we see it—and I think the authorities which were cited in the memorandum filed during the recess sustain us—it is a matter of whether there is a rational basis for the law, the fact that tests have been made, evidence that tests have been made, aside from what those tests were, would be admissible to show that the Association of American Railways, or the American Railway Association, did consider the question of air brake efficiency sufficient to require tests to be made.

The Court: Well, I have no doubt, Mr. Strouss, that if the state had produced here the witness as a witness, this Harley A. Johnson, that much of the evidence which you are seeking to have admitted through this Exhibit 206 might be admissible, but it seems to me that the viciousness of it lies in the fact that there is no opportunity to meet it.

Mr. Strouss: Of course, there is one thing I think I owe to the Court to say. I didn't answer Mr. Mason's argument the other day on the point the Court has mentioned [fol. 5296] this morning. As I said at the time, it was at the end of the afternoon and I was pretty tired, but on the matter of who Mr. Johnson is, and what his qualifications are, of course, your Honor will remember in the Lynn case, where the Westinghouse air brake tables were admitted in evidence—Now, any publication by Westinghouse, or any tables compiled by Westinghouse, of necessity would be prepared by some employee. The fact that it is by that company gives to the employees who are working for it the qualifications sufficient to support the books that are put out by the Westinghouse Company under the theory of that case. Now, the same would be true here. The Association of American Railways, or the American Railway Association, as the record does show, has as one of its functions and purposes the making of tests and the prescribing of specifications for air brakes; that was one of

the purposes of the organization. Now, it could only do that through employees, and here, as the record shows, these tests were made under an order of the Interstate Commerce Commission. Certainly, a recognition by that body of the qualifications of the Association to make the tests, and, of course, it could only be made through its employees, it would be, in turn, a recognition of the qualifications of those employees. I should have replied, I think I should say it to the Court this morning, that those are my views upon that question.

The Court: Well, you have made yourself very clear, Mr. Strouss.

[fol. 5298] Mr. Strouss: I have an exhibit of 15 pages consisting of form T reports of the Salt Lake division for 1940.

Mr. Mason: May I ask, Mr. Strouss, if those are not form T reports for the state of Nevada for 1940 including accidents west of Lawton, Nevada, as well as east, if any happened?

Mr. Strouss: Counsel will have to answer that for me. I think Mr. Sines gave us the reports and he will probably know better than we.

The Court: What are they, Mr. Sines?

Mr. Sines: Reports of accidents occurring within the state of Nevada including accidents on the Salt Lake division and on the Sacramento division.

Mr. Mason: If any happened on the Sacramento division.

Mr. Strouss: And Arizona would be those that happened in the state of Arizona on the Southern Pacific lines.

Mr. Sines: Yes.

Mr. Strouss: Of course the Los Angeles ones are just those of the Los Angeles division.

Mr. Sines: Yes.

The Court: They may be marked. Is there any objection?

[fol. 5299] Mr. Mason: No.

The Court: They may be admitted.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 399.")

Mr. Strouss: The Arizona reports consisting of 32 form T reports for the state of Arizona.

The Court: They may be admitted in evidence, there being no objection, as State's exhibit No. 400.

Mr. Mason: Exhibit No. 399 is Nevada and No. 400 is Arizona.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 400.")

Mr. Strouss: New Mexico consisting of 25 form T's for the state of New Mexico for the year 1940.

The Court: They may be admitted in evidence as State's exhibit No. 401.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 401.")

Mr. Strouss: Forty-eight form T's for the Los Angeles division, year 1940.

The Court: They may be admitted in evidence.

(The document referred to was received in evidence and marked "Plaintiff's Exhibit No. 402.")

J. S. HARDWICKE was recalled as a witness in rebuttal.

Direct examination (continued).

By Mr. Strouss:

Q. Mr. Hardwicke, these exhibits, Nos. 399, 400, 401, and 402, do those include all of the form T reports for the states of Arizona, Nevada, New Mexico, and the Los Angeles division for the year 1940 which in any way relate to casualties to trainmen and engineers on freight service and passengers and employees in passenger service?

A. Yes, sir.

Q. These are all such form T's for the year 1940?

A. That is correct.

Mr. Strouss: That is all.

Cross-examination.

By Mr. Mason:

Q. Mr. Hardwicke, you recall that your exhibits listing casualties in certain territory covered by this series of exhibits but for earlier years included yard accidents. Do you include any yard accidents where trainmen or engineers are involved in any of these exhibits?

[fol. 5301] A. Not in these, no.

Q. Do I understand that these form T reports cover the accidents which are listed upon your several exhibits listing accidents for the year 1940 for these three states in this division?

A. Yes, sir.

Q. You have only included the form T's as to which you made specific reference on the preceding exhibits which contained the list?

A. That is correct.

Q. Where passenger trains are involved, you included reported accidents to passengers as well as to passenger train employees?

A. That is right.

Q. And your accidents to passenger train employees included non-operating employees such as dining car waiters, Pullman porters, and so forth?

A. That is right.

Q. Have you undertaken in the documents submitted to the court as the exhibits to reproduce the carbon copies of the form T's which were furnished to you exactly?

A. Yes, we compared them and with the exception that there may be a misspelled word or something like that, but most of the corrections were made, just reproduced the form as it is.

[fol. 5302]. Mr. Strouss: I think we might have an understanding in that respect that errors which may have occurred in copying when discovered may be corrected. We have checked these pretty carefully and I think we have gotten all of them but there may be some.

Mr. Mason: If they are mere misprints or misstrikes by the typist, the errors would be obvious and I don't think we need to worry about those.

The Court: Any necessary corrections may be made.

Mr. Mason: I don't think we have anything further.

Mr. Strouss: That is all. You may step aside, Mr. Hardwicke.

(Witness excused.)

Mr. Strouss: We rest. I want to thank the Court and express my appreciation for your patience in this case. It has been long and tiring and I want to thank counsel for their courtesy during the course of the trial. I appreciate the many things they have done and their kindness in letting

me have the different records I have asked for and I want the Court and counsel to know I appreciate it.

The Court: Thank you, Mr. Strouss.

Mr. Mason: Your Honor, I think that opposing counsel [fol. 5303] and ourselves are to be congratulated upon the character of tribunal before which we have appeared these past forty-six days. I think counsel for the State can join me in expressing our deep appreciation of the close attention that the judge has paid to everything that has gone in, and I am not saying this because I think you have done it but I know you have paid faithful attention and taken everything in because your memory as to what has transpired, without the record before you, has been frequently more accurate than ours with the record before us. Also I want to express my appreciation for the courtesy of opposing counsel indicated many times when the case was in progress and many times probably when I didn't deserve any courtesy at all because I know sometimes I am inclined to be a little more enthusiastic than due decorum dictates and if I have in the course of the case made some remarks which were not of the most courteous character I sincerely apologize to the Court and to opposing counsel. Mr. Strouss has shown very kindly forbearance and I am sure he does not bear in his heart any feeling of unfriendliness or anything remotely approaching that on that account and I know I do not toward him. We have gotten on very well together and I [fol. 5304] think the case has been conducted in an atmosphere of the utmost friendliness insofar as it could be consistent with the trial of issues which we both regard of great importance.

The Court: I think that is true, Mr. Mason, and the Court appreciates the expressions of counsel. Now that the evidence in this lengthy case is complete and that phase of the case closed, this trial having lasted from November 19th to May 1st, taking up some forty-six court days in the trial, we are running into our thirteenth week, the Court desires to commend counsel for the State and the defendant company on the skill exhibited and the clear, clean-cut manner in which the various issues in this important case have been presented. Thorough preparation has been shown and the courtesies manifested by both sides have made the task much easier. The efficiency of the deputy clerk and the court reporters and their staff has contributed greatly to

the smooth operation of this case and for all of this the Court expresses its appreciation.

Now, gentlemen, there just remains one question and that is how this matter is to be finally submitted. You have indicated previously that you desired to submit it on briefs. Just how long a time do you want? I take it that the defendant in this case will probably file the opening brief, but what is your pleasure?

Mr. Mason: The defendant is prepared to proceed to file the opening brief with the understanding it may have the closing, if that is satisfactory to the Court and to the plaintiff?

The Court: What is your pleasure, Mr. Strouss?

Mr. Strouss: That is agreeable with me. Mr. Mason and I were talking yesterday about it. I believe you said you would like until the fifteenth of July.

Mr. Mason: Yes. We have in mind, your Honor, that the transcript will remain here in Tucson for correction by the reporters and will probably be available in San Francisco about the fifteenth of May and it will take us about sixty days to prepare and print the briefs that we desire to file. If we may file our opening brief by July 15th, and I would like to ask here the possibility of an extension even of that time because I may have to go to the hospital for a small operation and it may take longer.

The Court: For your answering brief, Mr. Strouss?

[fol. 5306] Mr. Strouss: I think we should have sixty days. I will have this advantage over Mr. Mason, that during his sixty days I will try to have the transcript digested.

The Court: And your reply brief, Mr. Mason?

Mr. Mason: We ought to have thirty days I should say for that but if you can enter that time tentatively with the understanding it may be cut short or extended if we ask for it. It may be that your Honor may desire oral argument after the briefs are filed and I should like to have that thought before you and opposing counsel, so if oral argument may be desired it may be had at the request of either party or at the instance of the Court following the filing of the final brief.

Mr. Strouss: If oral argument should be desired, I wonder if we couldn't have it in Phoenix rather than down here.

The Court: That is entirely satisfactory.

Mr. Mason: It would be satisfactory to me to have it at Phoenix and I am sure it would be to Judge Booth.

The Court: Then the record may show that the evidence being closed the case will be submitted upon briefs, the defendant, Southern Pacific Company, assuming the burden of filing the opening brief by July 15, 1941; the State to [fol. 5307] file its answering brief by September 15th, and a reply brief by the defendant by October 15th. Then if oral argument is deemed advisable it may be had at a convenient date after all of which the matter will be deemed submitted. The Court is at recess.

[fol. 5308] Reporter's Certificate to foregoing transcript omitted in printing.

[fol. 5309] IN THE SUPERIOR COURT OF THE STATE OF ARIZONA
IN AND FOR THE COUNTY OF PIMA

[Title omitted]

JUDGE'S CERTIFICATE

The foregoing transcript of the shorthand reporters' notes having been duly filed in this cause in the office of the Clerk of the Superior Court of the State of Arizona, in and for the County of Pima, and notice of said filing having been given to the parties in said cause, and no statement having been filed or served agreeing to the correctness and sufficiency of the said transcript, or suggesting amendments thereof, within the time provided by law, and the transcript having been duly presented to me by the Clerk of the Superior Court of the State of Arizona, in and for the County of Pima, on this 29th day of April, 1942, and finding said transcript correct,

I hereby certify that the said transcript is correct.

Wm. W. Hall, Judge.

Defendant's Exhibit No.1 (Witness Sines)
Nov.19 1940

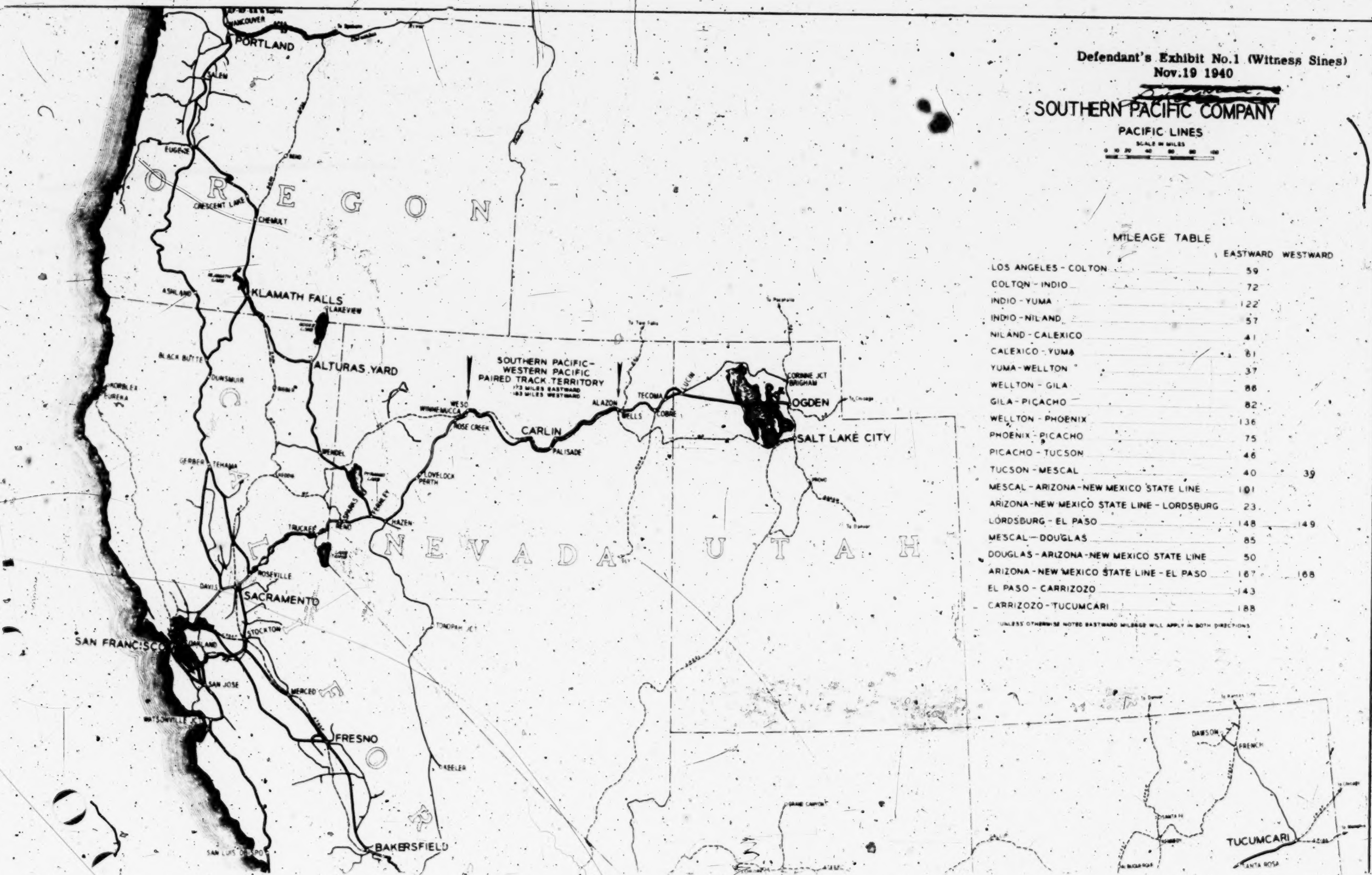
SOUTHERN PACIFIC COMPANY
PACIFIC LINES

SCALE IN MILES
0 10 20 30 40 50 60 70 80 90 100

MILEAGE TABLE

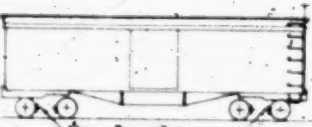

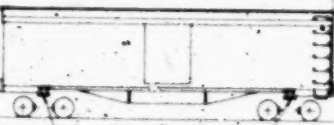

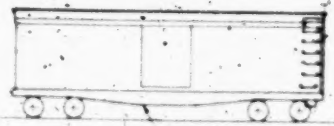





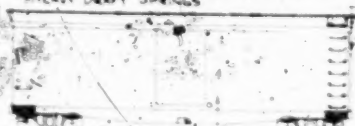
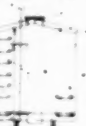


	EASTWARD	WESTWARD
LOS ANGELES - COLTON	59	
COLTON - INDIO	72	
INDIO - YUMA	122	
INDIO - NILAND	57	
NILAND - CALEXICO	41	
CALEXICO - YUMA	81	
YUMA - WELLTON	37	
WELLTON - GILA	86	
GILA - PICACHO	82	
WELLTON - PHOENIX	136	
PHOENIX - PICACHO	75	
PICACHO - TUCSON	46	
TUCSON - MESCAL	40	39
MESCAL - ARIZONA-NEW MEXICO STATE LINE	101	
ARIZONA-NEW MEXICO STATE LINE - LORDSBURG	23	
LORDSBURG - EL PASO	148	149
MESCAL - DOUGLAS	85	
DOUGLAS - ARIZONA-NEW MEXICO STATE LINE	50	
ARIZONA-NEW MEXICO STATE LINE - EL PASO	167	168
EL PASO - CARRIZOZO	143	
CARRIZOZO - TUCUMCARI	188	






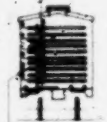
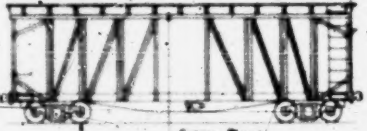
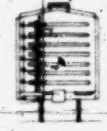
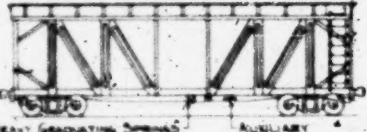
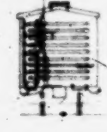

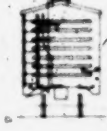
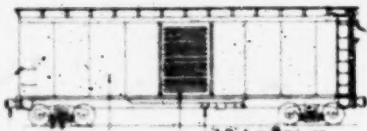
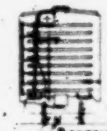
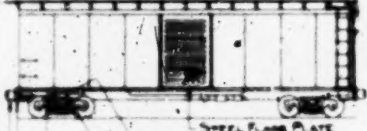
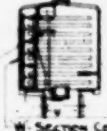
UNLESS OTHERWISE NOTED EASTWARD MILEAGE WILL APPLY IN BOTH DIRECTIONS



Defendant's Exhibit No. 2 (Witness Leriche)
Nov. 19 1940

SOUTHERN PACIFIC COMPANY
PACIFIC LINES
CHRONOLOGY OF FREIGHT BOX CARS YEAR 1900 TO 1940
SHOWING DESIGN AND CAPACITY CHARACTERISTICS

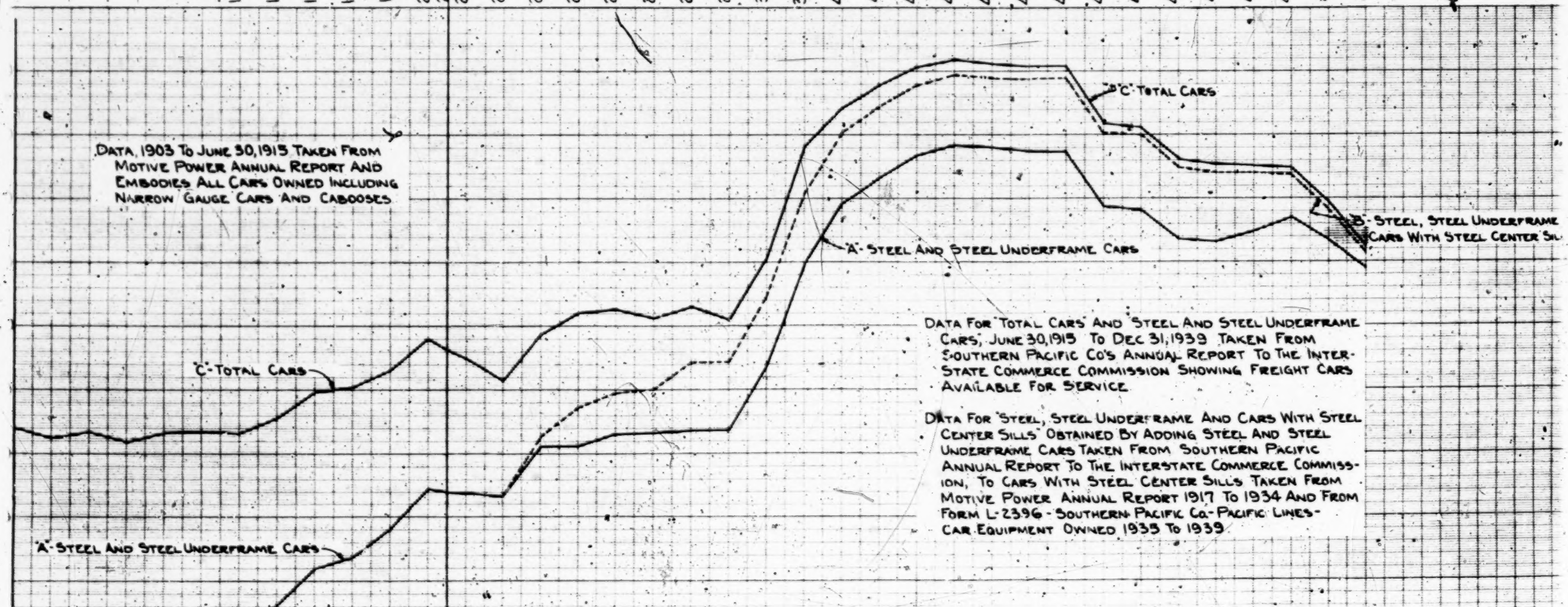
YEAR	SIDE ELEVATION A	END ELEVATION B	NEW FEATURES C	CARRYING CAPACITY & WEIGHT LBS D	CUBICAL CAPACITY - CU FT E	CROSS SECTIONAL AREA CENTER BILLS TO TRAILERS F
1900	 METAL BRAKE BEAMS		METAL BRAKE BEAMS	60,000 30,000	1946	
1901	 CAST STEEL BODY BOLSTERS		CAST STEEL BODY BOLSTERS	80,000 33,000	2326	
1903	 STEEL UNDERFRAME		STEEL UNDERFRAME	80,000 36,000	2448	
1904	 10 AIR BRAKE CYLINDER		10 AIR BRAKE CYLINDER	126,000 45,000	2750	
1909	 125 LB CAST IRON WHEELS CAST STEEL TRUCK SIDE FRAMES HEAVY DRAFT SPRINGS		125 LB CAST IRON WHEELS HEAVY DRAFT SPRINGS CAST STEEL TRUCK SIDE FRAMES	126,000 45,000	2750	
1911	 INCREASED CUBICAL CAPACITY		INCREASED CUBICAL CAPACITY	125,000 44,000	3510	
1913	 SINGLE SHEATHED STEEL SUPERSTRUCTURE FRAMING K-2 TRIPLE VALVE		SINGLE SHEATHED STEEL SUPERSTRUCTURE FRAMING K-2 TRIPLE VALVE	127,000 42,000	3558	

1915	 K.E. TRIPLE VALVE STEEL SUPERSTRUCTURE FRAMING		SINGLE SHEATHED-STEEL SUPERSTRUCTURE FRAMING K.E. TRIPLE VALVE	121,000	46,000	3575	
1916	 FRICTION DRAFT GEARS		FRICTION DRAFT GEARS	127,000	46,000	3558	26
1919	 CAST STEEL COUPLER YOKES TYPE D COUPLERS	 CORRUGATED STEEL ENDS	TYPE D COUPLERS CAST STEEL COUPLER YOKES CORRUGATED STEEL ENDS	125,000	46,000	3100	26
1924	 STEEL ROOF 750 LB. CAST IRON WHEELS		750 LB. CAST IRON WHEELS STEEL ROOF	126,000	45,000	3455	26
1929	 HEAVY GRADUATING SPRINGS AUXILIARY HAND BRAKE LEVER		HEAVY GRADUATING SPRINGS AUXILIARY HAND BRAKE LEVER	125,000	44,000	3138	29
1927	 750 LB. CAST IRON SINGLE PLATE WHEELS		750 LB. CAST IRON SINGLE PLATE WHEELS	125,000	44,000	3138	29
1936 1937	 15 AIR BRAKES STEEL SIDE DOORS ALL STEEL, WOOD LINED POWER HAND BRAKE SHUDDER SPRINGS NO 3 BRAKE BEAM, 1936 - NO 3 BRAKE BEAM, 1937 TYPE E COUPLERS ADDITIONAL HAND HOLD	 BOTTOM ROD SUPPORTS BRAKE BEAM SAFETY GUARDS	ALL STEEL, WOOD LINED STEEL SIDE DOORS ADDITIONAL HAND HOLDS POWER HAND BRAKE 15 AIR BRAKES TYPE E COUPLERS SHUDDER SPRINGS NO 3 BRAKE BEAM, 1936 - NO 3 BRAKE BEAM, 1937 BRAKE BEAM SAFETY GUARDS BOTTOM ROD SUPPORTS	124,000	45,000	3712	213
1940	 STEEL FLOOR PLATE BRAKE PIPE ANCHORS BRAKE HANGER WEARING PLATES WING BRAKE BALANCER COUPLER CENTERING DEVICE SWIVEL SHANK COUPLER METAL RUNNING BOARD	 W SECTION CORNER POSTS METAL BRAKE STEP	SWIVEL SHANK COUPLERS COUPLER CENTERING DEVICE METAL RUNNING BOARDS METAL BRAKE STEP W SECTION CORNER POSTS STEEL FLOOR PLATE WING BRAKE BALANCER BRAKE HANGER WEARING PLATES BRAKE PIPE ANCHORS	124,000	45,000	3712	213

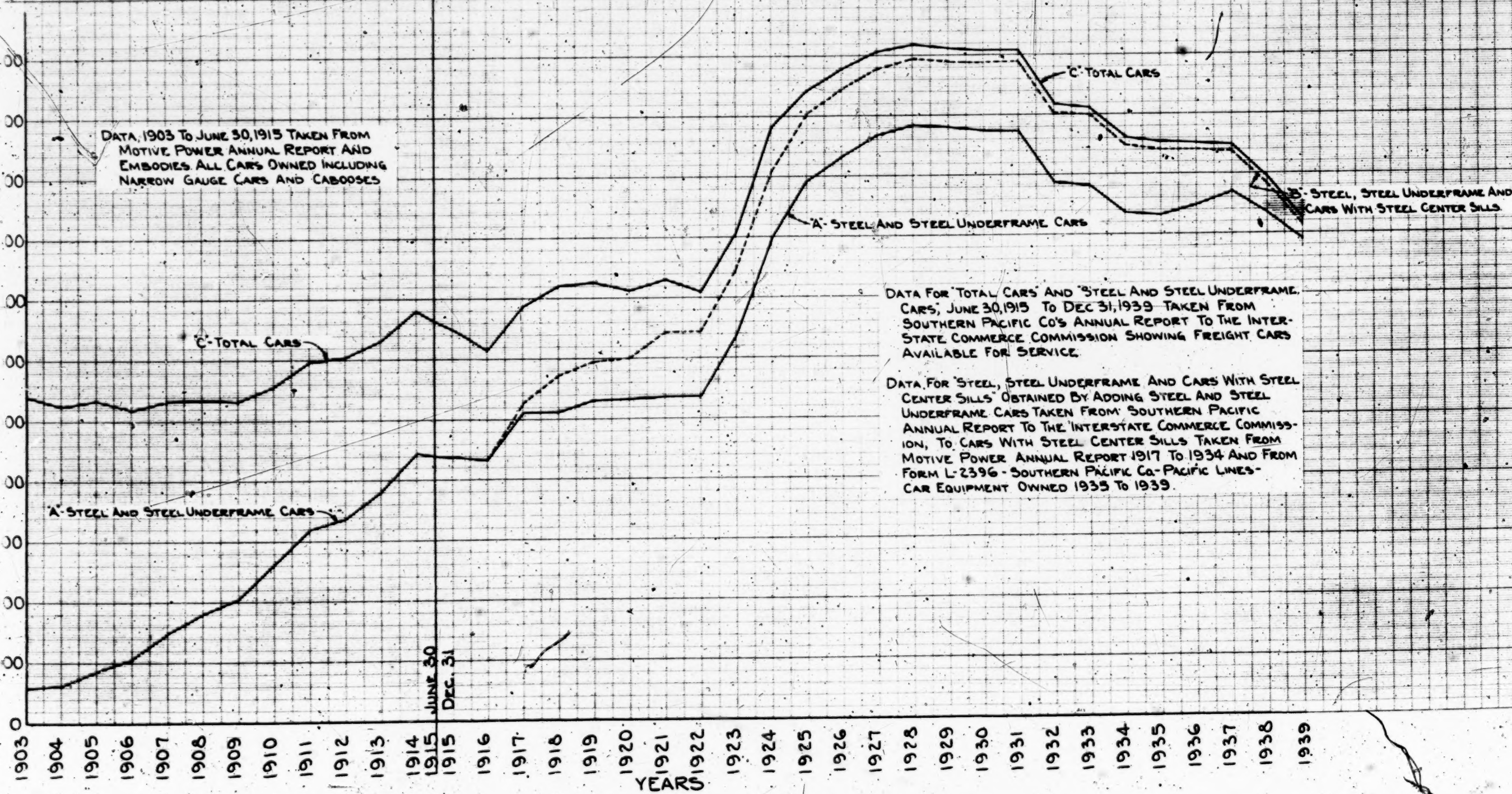
SOUTHERN PACIFIC CO PACIFIC LINES
COMPARISON OF FREIGHT CARS
ALL STEEL, STEEL UNDERFRAME AND OF
OTHER CONSTRUCTION
YEARS 1903 TO 1939

Defendant's Exhibit No. 3 (Witness Leriche)
Nov. 19, 1940



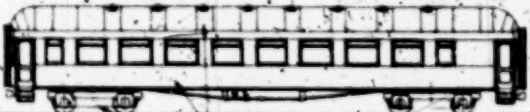
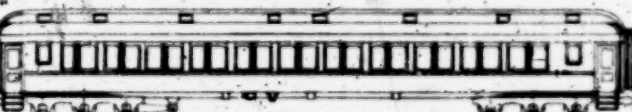





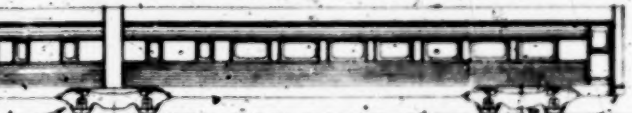


26264	3088
26743	4330
25913	5289
26621	7380
26784	9045
26576	10203
27828	13093
29853	15871
30161	16842
31492	18975
34049	22222
33126	21969
32475	21909
30704	21621
34337	25478
35985	25659
36326	26520
35589	26632
36547	26822
35464	26814
40268	31771
49118	39798
52155	44570
53855	46559
55335	48361
55968	49156
55599	48965
55446	48689
55455	48730
50923	44403
50594	44083
48122	41814
47696	41560
47658	42393
47487	43471
44709	41746
41299	39490









2891	3088	4330	5289	7380	9045	10203	13093	15871	16842	18975	22222	21969	21909	21621	25478	25659	26520	26632	26822	26814	31771	39798	44570	46559	48361	49156	48965	48689	48730	44403	44083	41814	41560	42393	43471	41746	39490
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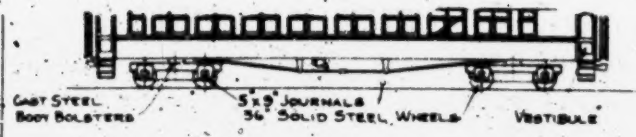
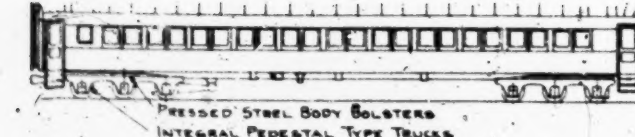
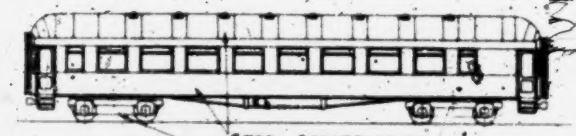
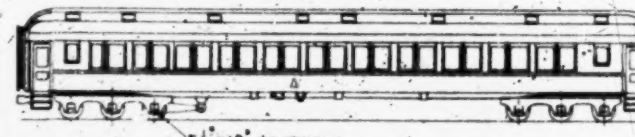
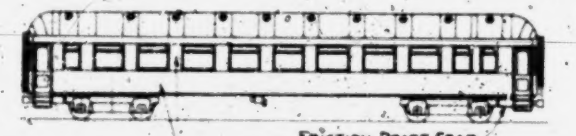




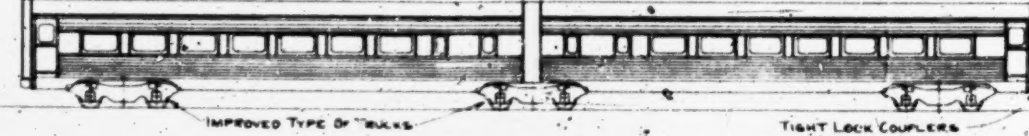
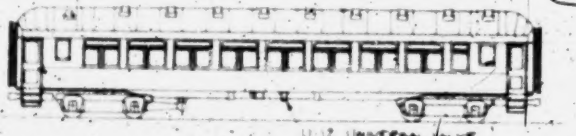

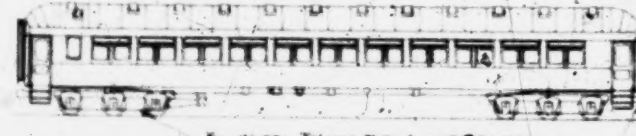
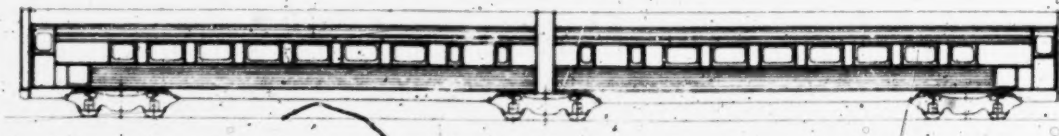


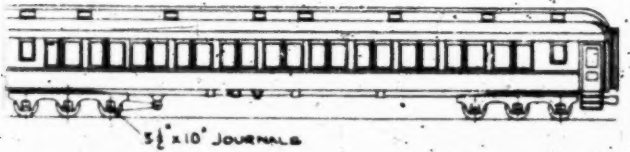
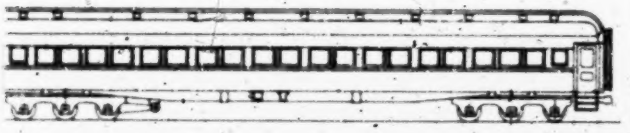

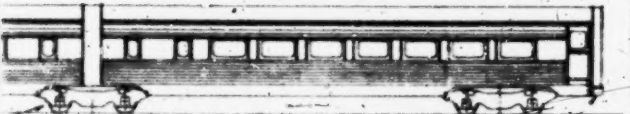


SOUTHERN PACIFIC COMPANY
PACIFIC LINES
CHRONOLOGY OF PASSENGER COACH AND CHAIR CAR YEAR 1900 TO 1940
SHOWING DESIGN AND IMPROVEMENTS

SIDE ELEVATION	YEAR	NEW FEATURES	LENGTH OVER PLATFORMS COUPLED	SEATING CAPACITY	AVERAGE WEIGHT LBS.	SIDE ELEVATION
 <p>CAST STEEL BODY BOLSTERS 5x9 JOURNALS 34\" SOLID STEEL WHEELS VESTIBULE</p>	1900	LENGTH INCREASED SEATING CAPACITY INCREASED VESTIBULES AIR SIGNAL STEAM HEAT BRAKING RATIO INCREASED TO 80%	67-8 1/2'	70	89100	 <p>PRESSED STEEL BODY BOLSTERS INTEGRAL PEDAL TYPE TRUCKS</p>
 <p>STEEL CONSTRUCTION STEEL TRUCKS</p>	1901	GAS LIGHTS				 <p>5x10 JOURNALS</p>
 <p>FRICTION DRAFT GEAR ALL STEEL CONSTRUCTION INCLUDING INSIDE FINISH</p>	1902	5x9 JOURNALS 34\" SOLID STEEL WHEELS				 <p>5x10 JOURNALS 34\" SOLID STEEL WHEELS</p>
 <p>16x12 BRAKE EQUIPMENT 15x10\" BEAMS SHARON COUPLER</p>	1903	TRUSSED STEEL BRAKE BEAMS CAST STEEL BODY BOLSTERS BRAKING RATIO INCREASED TO 90%				 <p>5x10 JOURNALS 34\" SOLID STEEL WHEELS</p>
 <p>16x12 BRAKE EQUIPMENT 15x10\" BEAMS SHARON COUPLER</p>	1904	FIRST STEEL CAR BUILT IN AMERICA HAS CONSTRUCTED IN S.P. CO'S SHOPS AT SACRAMENTO CALIF. ALL STEEL CONSTRUCTION EXCEPT INSIDE FINISH WHICH IS WOOD STEEL TRUCKS	67-8 1/2'	70	107000	 <p>5x10 JOURNALS 34\" SOLID STEEL WHEELS</p>
 <p>16x12 BRAKE EQUIPMENT 15x10\" BEAMS SHARON COUPLER</p>	1905	ALL STEEL CONSTRUCTION INCLUDING INSIDE FINISH FRICTION DRAFT GEAR VAPOR STEAM HEAT 2\" STEAM TRAIL LINE	67-8 1/2'	72	89000	 <p>5x10 JOURNALS 34\" SOLID STEEL WHEELS</p>
<p>16x12 BRAKE EQUIPMENT 15x10\" BEAMS SHARON COUPLER</p>	1906	SIZE OF CENTER SILLS INCREASED FROM 10\"x15\" I BEAMS TO 15\"x10\" I BEAMS SHARON COUPLERS APPLIED IN PLACE OF JANNEY COUPLERS L AND N BRAKE EQUIPMENT TYPE L TRIPLE VALVE AND TYPE N BRAKE CYLINDER SIZE OF BRAKE CYLINDER INCREASED FROM 14x12 TO 16x12 COMB GAS AND ELECTRIC LIGHTING	67-8 1/2'	72	104000	<p>5x10 JOURNALS 34\" SOLID STEEL WHEELS</p>
<p>16x12 BRAKE EQUIPMENT 15x10\" BEAMS SHARON COUPLER</p>	1907	END CONSTRUCTION STRENGTHENED STRAIGHT ELECTRIC LIGHTING AXLE GENERATOR	68-6 1/2'	72	107000	<p>5x10 JOURNALS 34\" SOLID STEEL WHEELS</p>
<p>16x12 BRAKE EQUIPMENT 15x10\" BEAMS SHARON COUPLER</p>	1908	IMPROVED BRAKE EQUIPMENT L-12 UNIVERSAL VALVE F. J. S. H. H. H. H. H.	68-6 1/2'	72	107800	<p>5x10 JOURNALS 34\" SOLID STEEL WHEELS</p>
<p>5x10 JOURNALS 34\" SOLID STEEL WHEELS</p>	1909					<p>5x10 JOURNALS 34\" SOLID STEEL WHEELS</p>

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 AR YEAR 1900 TO 1940
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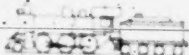
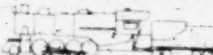
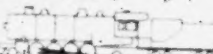

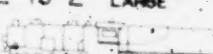
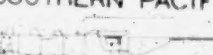
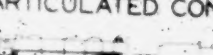

SIDE ELEVATION	YEAR	NEW FEATURES	LENGTH OVER PLATFORMS COUPLED	SEATING CAPACITY	AVERAGE WEIGHT LBS.
 PRESSED STEEL BODY BOLSTERS INTEGRAL PEDESTAL TYPE TRUCKS	1927	PRESSED STEEL BODY BOLSTERS INTEGRAL PEDESTAL TYPE TRUCKS LOCKING CENTER PINS THERMOSTATIC HEAT CONTROL DOUBLE DECK SPRING SEATS	80'-5 1/2"	80	140500
 5 1/2" x 10" JOURNALS	1928	MENS AND WOMENS WASH ROOMS SEPARATE FROM TOILET PORCELAIN WASH BASINS 5 1/2" x 10" JOURNALS 2" x 1" END TRAIN LINE VALVES	82'-2 1/2"	88	150300
	1929	MENS AND WOMENS LOUNGE DOUBLE PAN HOPPERS	82'-5 1/2"	BODY OF CAR 56 WOMENS LOUNGE 4 MENS SLEEPING ROOM 4 TOTAL 64	163900
 OUTER SASH TIGHTLY SEALED SINGLE UNIT TRUCK MOUNTED CONE CYLINDERS	1931	STREAMLINED CONSTRUCTION MATERIAL-HIGH TENSILE AND STAINLESS STEELS AIR CONDITIONED OUTER SASH TIGHTLY SEALED TIGHT LOCK COUPLERS IMPROVED DRAFT GEAR PRESSURE WATER SYSTEM INDIRECT LIGHTING SEAT LIGHTS INDIVIDUALLY CONTROLLED RADIO ROTATING-RECLINING CHAIRS WITH SPONGE RUBBER SEATS ALUMINUM FLOOR PLATES CAR FLOORING INLaid LINOLEUM FLOOR COVERING INSULATED AGAINST NOISE COMPARTMENTS FOR HAND LUGGAGE ELECTRO-PNEUMATIC HIGH SPEED BRAKE EQUIPMENT IMPROVED TYPE OF TRUCKS PROVIDES EASIER RIDING SPRING PAD LUBRICATORS JOURNALS TRUCK MOUNTED BRAKE CYLINDERS STEAM TRAIN LINE CONNECTION OF 2" FLEXIBLE METALLIC CONDUIT	79'-2"	BODY OF CAR 48 WOMENS LOUNGE 2 MENS SLEEPING ROOM 6 TOTAL 56	104500
 ARTICULATED UNIT TIGHT LOCK COUPLERS AND IMPROVED DRAFT GEAR	1937		132'-2"	BODY OF CAR 100 WOMENS LOUNGE 4 MENS SLEEPING ROOM 5 TOTAL 109	170800
					

	<p>1901 1902 1903 1905</p> <p>BRAKING RATIO INCREASED TO 80% GAS LIGHTS 5x9 JOURNALS 36 SOLID STEEL WHEELS TRUSS STEEL BRAKE BEAMS CAST STEEL BODY BOLSTERS BRAKING RATIO INCREASED TO 90%</p>	<p>67-8 1/2</p>	<p>70</p>	<p>89100</p>	
	<p>1906</p> <p>FIRST STEEL CAR BUILT IN AMERICA WAS CONSTRUCTED IN SP 606 SHOPS AT SACRAMENTO, CALIF. ALL STEEL CONSTRUCTION EXCEPT INSIDE FINISH WHICH IS WOOD STEEL TRUCKS</p>	<p>67-8 1/2</p>	<p>70</p>	<p>107000</p>	
	<p>1909</p> <p>ALL STEEL CONSTRUCTION INCLUDING INSIDE FINISH FRICTION DRAFT GEAR VAPOR STEAM HEAT 2" STEAM TRAIL LINE</p>	<p>67-8 1/2</p>	<p>72</p>	<p>85000</p>	
	<p>1913</p> <p>SIZE OF CENTER SILLS INCREASED FROM 10x25 I BEAMS TO 15x60 I BEAMS SHARON COUPLERS APPLIED IN PLACE OF JANNEY COUPLERS L&N BRAKE EQUIPMENT TYPE L TRIPLE VALVE AND TYPE N BRAKE CYLINDER SIZE OF BRAKE CYLINDER INCREASED FROM 14x12 TO 16x12 COMB GAS AND ELECTRIC LIGHTING</p>	<p>67-8 1/2</p>	<p>72</p>	<p>104000</p>	
	<p>1914</p> <p>END CONSTRUCTION STRENGTHENED STRAIGHT ELECTRIC LIGHTING AXLE GENERATOR</p>	<p>68-6 1/2</p>	<p>72</p>	<p>107000</p>	
	<p>1921</p> <p>IMPROVED BRAKE EQUIPMENT U-12 UNIVERSAL VALVE FLUSH HOPPERS ELECTRIC CEILING FANS</p>	<p>68-6 1/2</p>	<p>72</p>	<p>107800</p>	
	<p>1925</p> <p>LENGTH INCREASED SEATING CAPACITY INCREASED SIX WHEEL TRUCKS WITH CLASP BRAKES A&R D COUPLERS & QUADRUPLE SHEAR YOKES</p>	<p>80-5 1/2</p>	<p>90</p>	<p>138400</p>	

<p>PRESSED STEEL BODY BOLSTERS INTEGRAL PEDESTAL TYPE TRUCKS</p>  <p>5 1/2 x 10" JOURNALS</p>	<p>DOUBLE DECK SPRING SEATS</p> <p>1928</p> <p>MENS AND WOMENS WASH ROOMS SEPARATE FROM TOILET PORCELAIN WASH BASINS 5 1/2 x 10" JOURNALS 2 x 2" END TRAIN LINE VALVES</p>	<p>82'-2 1/2"</p> <p>88</p> <p>130300</p>
	<p>1929</p> <p>MENS AND WOMENS LOUNGE DOUBLE PAN HOPPERS</p>	<p>82'-5 1/2"</p> <p>Body of Car 36 MENS LOUNGE 4 MENS SHOWER ROOM 2 Total 42</p> <p>163500</p>
 <p>OUTER SASH TIGHTLY SEALED SINGLE UNIT</p> <p>TRUCK MOUNTED BRAKE CYLINDERS</p>  <p>ARTICULATED UNIT</p> <p>TIGHT LOCK COUPLERS AND IMPROVED DRAFT GEAR</p>	<p>1937</p> <p>STREAMLINED CONSTRUCTION MATERIAL-HIGH TENSILE AND STAINLESS STEELS AIR CONDITIONED OUTER SASH TIGHTLY SEALED TIGHT LOCK COUPLERS IMPROVED DRAFT GEAR PRESSURE WATER SYSTEM INDIRECT LIGHTING SEAT LIGHTS INDIVIDUALLY CONTROLLED RADIO ROTATING-RECLINING CHAIRS WITH SPONGE RUBBER SEATS ALUMINUM FLOOR PLATES, GEAR FLOOR HEAD LINOLEUM FLOOR COVERING INSULATED AGAINST NOISE COMPARTMENTS FOR HAND LUGGAGE ELECTRO-PNEUMATIC HIGH SPEED BRAKE EQUIPMENT IMPROVED TYPE OF TRUCKS PROVIDES EASIER RIDING SPRING PAD LUBRICATORS-JOURNALS TRUCK MOUNTED BRAKE CYLINDERS STEAM-TRAIN LINE CONNECTION OF 2" FLEXIBLE METALLIC CONDUIT</p>	<p>79'-2"</p> <p>Body of Car 48 MENS LOUNGE 2 MENS SHOWER ROOM 1 Total 51</p> <p>104500</p> <p>132'-2"</p> <p>Body of Car 100 MENS LOUNGE 4 MENS SHOWER ROOM 5 Total 109</p> <p>170800</p>
 <p>ELECTRIC LUGGAGE ELEVATORS SINGLE UNIT</p>  <p>ARTICULATED UNIT</p>	<p>1939</p> <p>FLUORESCENT LIGHTING ELECTRIC LUGGAGE ELEVATORS CENTER SILL AND END FRAMING MEMBERS MADE OF SPECIAL CENTER SILL STEEL AND DESIGNED TO MEET AAR COMMITTEE RECOMMENDATIONS OF FEB 24, 1935 INLaid RUBBER FLOOR COVERING PUBLIC ADDRESS SYSTEM</p>	<p>81'-0"</p> <p>Body of Car 44 MENS LOUNGE 2 MENS SHOWER ROOM 4 Total 50</p> <p>117800</p> <p>136'-0"</p> <p>Body of Car 92 MENS LOUNGE 2 MENS SHOWER ROOM 4 Total 98</p> <p>194500</p>

5313

Defendant's Exhibit No. 5 (Witness F.E. Russell)
Nov. 19, 1940

TYPE	WHEEL ARRANGEMENT (WHYTE SYSTEM)	SOUTHERN PACIFIC COMPANY PACIFIC LINES CHRONOLOGY OF FREIGHT LOCOMOTIVES PACIFIC LINES YEARS 1899 TO 1940 SHOWING IMPROVED DESIGN AND INCREASED TRACTIVE EFFORT
MOGUL	2-6-0	 28,710 LBS
CONSOLIDATION	2-8-0	 43,300 LBS
MIKADO	2-8-2	 51,060 LBS
2-10-2 SMALL	2-10-2	 65,380 LBS
2-10-2 LARGE	2-10-2	 75,150 LBS
SOUTHERN PACIFIC	4-10-2	 84,200 LBS
ARTICULATED CONSOLIDATION	4-8-8-2	 149,000 LBS
ARTICULATED CONSOLIDATION	4-8-8-2 AND 2-8-8-4	 124,300 LBS

TYPE	CLASS	YEAR PUT IN SERVICE	NUMBER PURCHASED	AVERAGE PRICE EACH	TRACTION EFFORT LBS	WGT ON DRIVERS LBS	BOILER PRESSURE LBS	TENDER CAPACITY OIL GALS	WATER GALS
MOGUL	M-4	1899-1901	103	14,000	28,210	126,000	190	2,990	4,500
CONSOLIDATION	C-9-10	1905-1911	172	17,500	43,300	187,000	200	2,940	7,000
MIKADO	MR-5-8	1913-1915	35	24,500	51,080	210,000	200	2,940	9,000
2-10-2 SMALL	F-1	1917-1919	52	88,000	65,300	273,000	200	3,120	10,030
2-10-2 LARGE	F-4.5	1922-1924	101	84,000	75,150	306,000	200	4,000	12,000
SOUTHERN PACIFIC	SP-12.3	1925-1927	49	60,000	84,200	317,000	225	4,912	12,130
ARTICULATED CONSOLIDATION	AC-4	1928	10	130,500	149,000	475,200	235	4,883	18,152
ARTICULATED CONSOLIDATION	AC-8	1939	28	83,000	124,300	537,000	250	6,400	21,900
ARTICULATED CONSOLIDATION	AC-9	1939	12	20,600	124,300	537,000	250	28 TONS COAL	22,200

* BOOSTER EQUIPPED

Defendant's Exhibit No. 6 (Witness F.E. Russell)
Nov. 19, 1940

SOUTHERN PACIFIC COMPANY
PACIFIC LINES
CHRONOLOGY OF PASSENGER LOCOMOTIVES PACIFIC LINES
YEARS 1895 TO 1940
SHOWING IMPROVED DESIGN AND INCREASED TRACTIVE EFFORT

TYPE WHEEL ARRANGEMENT (WHYTE SYSTEM)

TEN WHEEL 4-6-0



TEN WHEEL 4-6-0



PACIFIC 4-6-2



PACIFIC 4-6-2



MOUNTAIN 4-8-2



GOLDEN STATE 4-8-4



GOLDEN STATE 4-8-4



TYPE	CLASS	YEAR PUT IN SERVICE	NUMBER PURCHASED	AVERAGE PRICE EACH	TRACTION EFFORT LBS	WT ON DRIVERS LBS	BOILER PRESSURE LBS	TENDER CAPACITY OIL GALS	TENDER CAPACITY COAL TONS
TEN WHEEL	T-1	1895-1897	39	11,500	23,260	112,000	180	4,500	4,000
TEN WHEEL	T-25	1901	8	14,000	27,590	134,000	200	4,500	4,000
PACIFIC	P-5	1912	15	22,500	28,920	141,000	200	2,940	7,000
PACIFIC	P-8	1921	15	72,500	43,660	180,000	200	4,000	12,000
MOUNTAIN	MT-1	1923-1924	28	82,000	57,510	248,000	210	4,000	12,000
GOLDEN STATE	GS-1	1930	10	115,000	62,200	262,000	250	4,912	18,152
GOLDEN STATE	GS-4	1940	20	173,000	64,800	276,000	300	6,275	23,500

* BOOSTER EQUIPPED
♦ PRICE AND WEIGHT OF THESE LOCOMOTIVES ESTIMATED BUT ADDED HERE FOR COMPARATIVE PURPOSES

Defendant's Exhibit No. 7 (Witness F.F. Russell)
Nov. 19, 1940

SOUTHERN PACIFIC COMPANY
(Pacific Lines)

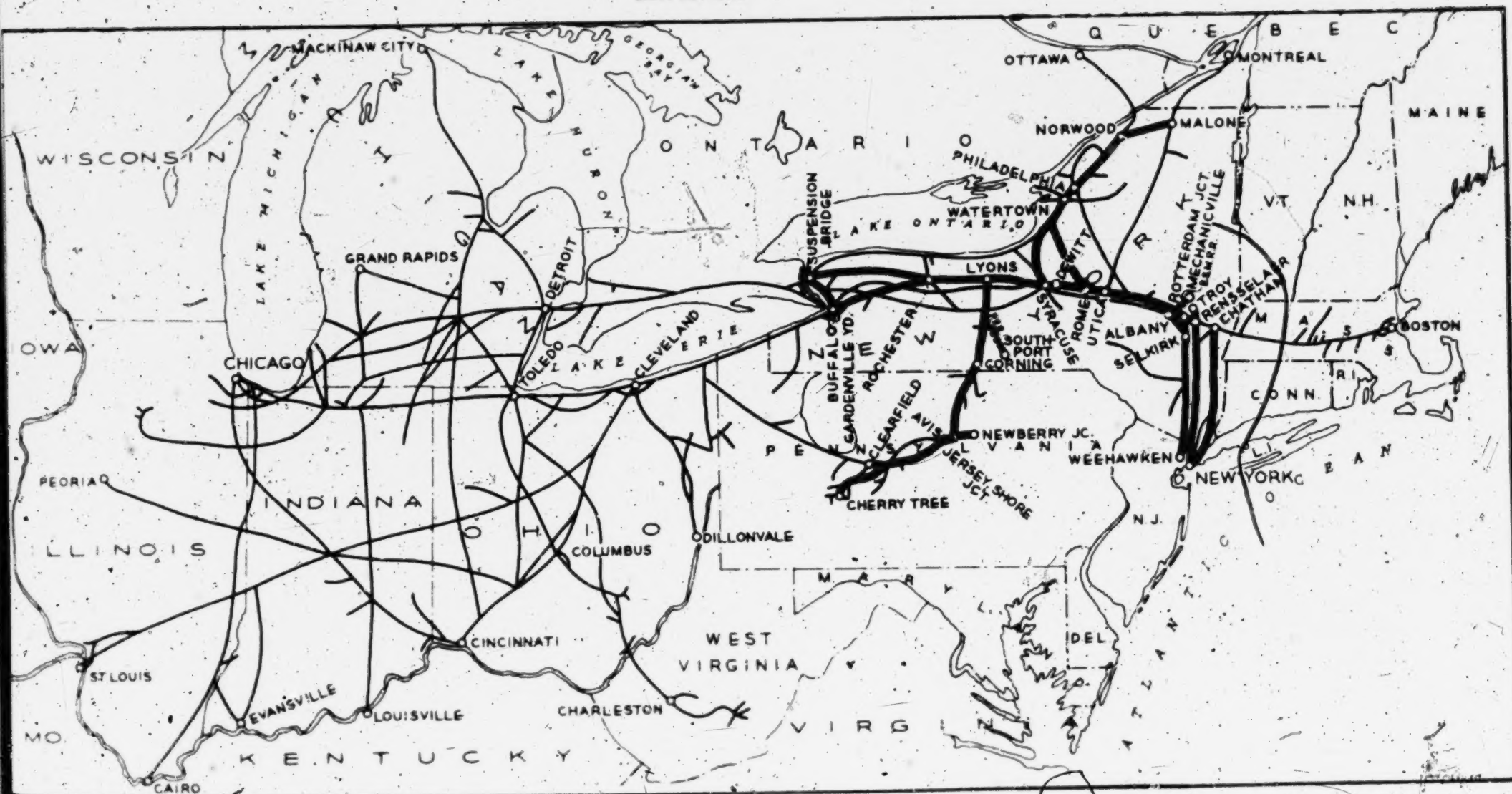
LOCOMOTIVES PURCHASED OR BUILT IN COMPANY SHOPS
YEARS 1922 TO 1940

LINE NO. (a)	YEAR (b)	SERVICE (c)	TYPE (d)	ENGINE NUMBERS (e)	NUMBER OF UNITS (f)	TRACTIVE POWER PER UNIT (Pounds) (g)	TOTAL TRACTIVE POWER (Pounds) (h)	COST PER UNIT (i)	TOTAL COST (j)	TRUST SERIES (k)
1	1922	Freight	2-10-2	3668-3717	50	75,150	3,757,500	\$ 82,296	\$4,114,816	F
2	1923	Passenger	4-6-2	2478-2483	6	43,660	261,960	64,763	388,577	F
3	1923	Frt. & Pasgr.	4-8-2	4300-4309	10	57,510	575,100	80,336	803,336	F
4		TOTAL			16		837,060		1,191,933	
5	1924	Passenger	4-6-2	2484-2491	8	43,660	349,280	74,933	599,467	G
6	1924	Freight	2-10-2	3718-3751	34	75,150	2,555,100	84,504	2,873,152	F
7	1924	Freight	2-10-2	3752-3763	12	75,150	901,800	87,314	1,047,769	G
8	1924	Freight	2-10-2	3764-3768	5	75,150	375,750	89,930	449,648	G
9	1924	Frt. & Pasgr.	4-8-2	4310-4327	18	57,510	1,035,180	82,893	1,492,080	G
10		TOTAL			77		5,217,110		6,462,316	
11	1925	Freight	2-10-2	3769	1	75,150	75,150	87,413	87,413	F
12	1925	Frt. & Pasgr.	4-8-2	4328-4333	6	57,510	345,060	82,180	493,080	H
13	1925	Freight	4-10-2	5000	1	84,200	84,200	85,977	85,977	F
14	1925	Freight	4-10-2	5001-5015	15	84,200	1,263,000	86,801	1,302,014	H
15		TOTAL			23		1,767,410		1,968,484	
16	1926	Frt. & Pasgr.	4-8-2	4334-4345	12	57,510	690,120	80,947	971,363	H
17	1926	Frt. & Pasgr.	4-8-2	4346-4350	5	57,510	287,550	86,064	430,321	I
18	1926	Freight	4-10-2	5016-5038	23	84,200	1,936,600	89,137	2,050,151	I
19		TOTAL			40		2,914,270		3,451,835	
20	1927	Frt. & Pasgr.	4-8-2	4351-4356	6	57,510	345,060	82,614	495,685	H
21	1927	Frt. & Pasgr.	4-8-2	4357-4358	2	57,510	115,020	83,526	167,053	J
22	1927	Freight	4-10-2	5039-5048	10	84,200	842,000	96,236	962,362	J
23		TOTAL			18		1,302,080		1,625,100	
24	1928	Frt. & Pasgr.	4-8-2	4100-4108	9	112,760	1,014,840	130,740	1,176,664	K
25	1928	Frt. & Pasgr.	4-8-2	4359-4360	2	57,510	115,020	80,042	160,084	K
26		TOTAL			11		1,129,860		1,336,748	
27	1929	Frt. & Pasgr.	4-8-2	4109	1	112,760	112,760	130,740	130,740	K
28	1929	Frt. & Pasgr.	4-8-2	4110-4125	16	112,760	1,804,160	132,823	2,125,169	L
29	1929	Frt. & Pasgr.	4-8-2	4361-4366	6	57,510	345,060	80,042	480,253	K
30	1929	Frt. & Pasgr.	4-8-2	4367-4370	4	57,510	230,040	81,325	325,299	L
31		TOTAL			27		2,492,020		3,061,461	
32	1930	Frt. & Pasgr.	4-8-2	4126-4148	23	124,300	2,858,900	139,496	3,208,411	M
33	1930	Frt. & Pasgr.	4-8-2	4371-4376	6	57,510	345,060	81,325	487,949	L
34	1930	Frt. & Pasgr.	4-8-2	4400-4409	10	62,200	622,000	115,020	1,150,197	M
35		TOTAL			39		3,825,960		4,846,557	
36	1931	Frt. & Pasgr.	4-8-2	4149-4150	2	124,300	248,600	139,496	278,992	M

LINE NO.	YEAR	SERVICE	TYPE	ENGINE NUMBERS	OF UNITS	PER UNIT (Pounds)	POWER (Pounds)	COST PER UNIT	TOTAL COST	TRUST SERIES
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	1922	Freight	2-10-2	3668-3717	50	75,150	3,757,500	\$ 82,296	84,114,816	F
2	1923	Passenger	4-6-2	2478-2483	6	43,660	261,960	64,763	388,577	F
3	1923	Frt. & Passgr.	4-8-2	4300-4309	10	57,510	575,100	80,336	803,336	F
4	TOTAL				15		837,060		1,191,933	
5	1924	Passenger	4-6-2	2484-2491	8	43,660	349,280	74,933	599,467	G
6	1924	Freight	2-10-2	3718-3751	34	75,150	2,555,100	84,504	2,873,152	F
7	1924	Freight	2-10-2	3752-3763	12	75,150	901,800	87,314	1,047,769	G
8	1924	Freight	2-10-2	3764-3768	5	75,150	375,750	89,930	449,648	G
9	1924	Frt. & Passgr.	4-8-2	4310-4327	18	57,510	1,035,180	82,893	1,492,080	G
10	TOTAL				77		5,217,110		6,462,116	
11	1925	Freight	2-10-2	3769	1	75,150	75,150	87,413	87,413	F
12	1925	Frt. & Passgr.	4-8-2	4328-4333	6	57,510	345,060	82,180	493,080	H
13	1925	Freight	4-10-2	5000	1	84,200	84,200	85,977	85,977	F
14	1925	Freight	4-10-2	5001-5015	15	84,200	1,263,000	86,801	1,302,014	H
15	TOTAL				23		1,767,410		1,948,484	
16	1926	Frt. & Passgr.	4-8-2	4334-4345	12	57,510	690,120	80,947	972,363	H
17	1926	Frt. & Passgr.	4-8-2	4346-4350	5	57,510	287,550	86,064	430,321	I
18	1926	Freight	4-10-2	5016-5038	23	84,200	1,936,600	89,137	2,030,151	I
19	TOTAL				40		2,914,270		3,451,835	
20	1927	Frt. & Passgr.	4-8-2	4351-4356	6	57,510	345,060	82,614	495,685	H
21	1927	Frt. & Passgr.	4-8-2	4357-4358	2	57,510	115,020	83,526	167,053	J
22	1927	Freight	4-10-2	5039-5048	10	84,200	842,000	96,236	962,362	J
23	TOTAL				18		1,302,080		1,625,100	
24	1928	Frt. & Passgr.	4-8-8-2	4100-4108	9	112,760	1,014,840	130,740	1,176,664	K
25	1928	Frt. & Passgr.	4-8-2	4359-4360	2	57,510	115,020	80,042	160,084	K
26	TOTAL				11		1,129,860		1,336,748	
27	1929	Frt. & Passgr.	4-8-8-2	4109	1	112,760	112,760	130,740	130,740	K
28	1929	Frt. & Passgr.	4-8-8-2	4110-4125	16	112,760	1,804,160	132,823	2,125,169	L
29	1929	Frt. & Passgr.	4-8-2	4361-4366	6	57,510	345,060	80,042	480,253	K
30	1929	Frt. & Passgr.	4-8-2	4367-4370	4	57,510	230,040	81,325	325,299	L
31	TOTAL				27		2,492,020		3,061,461	
32	1930	Frt. & Passgr.	4-8-8-2	4126-4148	23	124,300	2,858,900	139,496	3,208,411	N
33	1930	Frt. & Passgr.	4-8-2	4371-4376	6	57,510	345,060	81,325	487,949	L
34	1930	Frt. & Passgr.	4-8-4	4400-4409	10	62,200	622,000	115,020	1,150,197	N
35	TOTAL				39		3,825,960		4,846,557	
36	1931	Frt. & Passgr.	4-8-8-2	4149-4150	2	124,300	248,600	139,496	278,992	N
37	1937	Frt. & Passgr.	4-8-8-2	4151-4162	12	124,300	1,491,600	156,236	1,874,831	N
38	1937	Frt. & Passgr.	4-8-8-2	4163-4176	14	124,300	1,740,200	162,537	2,275,514	O
39	1937	Frt. & Passgr.	4-8-4	4410-4415	6	62,200	373,200	131,532	789,194	N
40	1937	Frt. & Passgr.	4-8-4	4416-4429	14	62,800	879,200	137,869	1,930,165	O
41	TOTAL				46		4,484,200		6,869,704	
42	1939	Frt. & Passgr.	2-8-8-4	3800-3811	12	124,300	1,491,600	201,917	2,423,000	P
43	1939	Frt. & Passgr.	4-8-8-2	4177-4204	28	124,300	3,480,400	183,119	5,227,327	P
44	TOTAL				40		4,972,000		7,590,327	
45	1940	Frt. & Passgr.	4-8-4	4430-4449	20	64,800	1,296,000	172,891	3,457,825	Q
46	GRAND TOTAL				409		34,244,070		46,215,898	

* - Ordered during 1940. Delivery to commence in December, 1940.
Cost estimated.

Defendant's Exhibit No. 10 (Witness LeRoy B. Porter)
Nov. 25, 1940



NEW YORK CENTRAL RAILROAD CO.

HEAVY LINE INDICATES TERRITORY
COVERED BY TYPICAL FREIGHT TRAIN EXHIBIT.

Defendant's Exhibit No. 11 (Witness Porter)

THE NEW YORK CENTRAL RAILROAD COMPANY
(Including All leased Lines)

FREIGHT OPERATING AND
FREIGHT TRANSPORTATION EXPENSES
RELATED TO TRAFFIC
CALENDAR YEARS 1922 TO 1939 INCLUSIVE

YEAR	REVENUE TON MILES	FREIGHT OPERATING EXPENSES	FREIGHT TRANSPORTATION EXPENSES	AVERAGE PER 1,000 REVENUE TON MILES	
				FREIGHT OPERATING EXPENSES	FREIGHT TRANSP. EXPENSES
(a)	(b)	(c)	(d)	(e)	(f)
1939	26,029,141,762	\$168,817,327	\$ 85,653,520	\$ 6.49	\$ 3.29
1938	21,981,707,210	153,903,955	80,548,917	7.00	3.66
1937	28,206,471,339	192,406,637	96,279,263	6.82	3.41
1936	27,370,143,347	181,701,786	90,420,058	6.64	3.30
1935	22,935,043,493	155,480,664	79,304,364	6.78	3.46
1934	21,973,818,783	146,421,570	73,876,599	6.66	3.36
1933	20,691,649,978	138,067,671	68,712,560	6.67	3.32
1932	19,776,624,043	148,951,858	73,460,480	7.53	3.71
1931	24,902,953,692	201,905,274	97,999,065	8.11	3.94
1930	30,483,123,158	253,792,942	122,001,216	8.33	4.00
1929	36,803,277,839	307,283,040	146,132,742	8.35	3.97
1928	35,674,706,558	294,331,503	142,396,567	8.25	3.99
1927	36,000,453,150	303,655,210	145,310,213	8.43	4.04
1926	37,734,640,122	313,454,767	148,314,922	8.31	3.93
1925	35,929,489,417	306,647,925	146,988,731	8.53	4.09
1924	33,839,679,365	299,538,769	147,945,775	8.85	4.37
1923	40,016,478,299	354,692,697	165,023,950	8.86	4.12
1922	31,201,314,561	308,114,086	147,416,562	9.88	4.72
TOTAL 1936- 1939	103,587,463,658	696,829,705	352,901,758	6.73	3.41
TOTAL 1922- 1925	140,986,961,642	1,268,993,477	607,775,018	9.00	4.31

YEAR	REVENUE TON MILES	FREIGHT OPERATING EXPENSES	FREIGHT TRANSPORTATION EXPENSES	AVERAGE PER TON MILE	
				FREIGHT OPERATING EXPENSES	FREIGHT TRANSP. EXPENSES
(a)	(b)	(c)	(d)	(e)	(f)
1939	26,029,141,762	\$168,817,327	\$ 85,653,520	\$ 6.49	\$ 3.29
1938	21,981,707,210	153,903,955	80,548,917	7.00	3.66
1937	28,206,471,339	192,406,637	96,279,263	6.82	3.41
1936	27,370,143,347	181,701,786	90,420,058	6.64	3.30
1935	22,935,043,493	155,480,664	79,304,364	6.78	3.46
1934	21,973,818,783	146,421,570	73,876,599	6.66	3.36
1933	20,691,649,978	138,067,671	68,712,560	6.67	3.32
1932	19,776,624,043	148,951,858	73,460,480	7.53	3.71
1931	24,902,953,692	201,905,274	97,999,065	8.11	3.94
1930	30,483,123,158	253,792,942	122,001,216	8.33	4.00
1929	36,803,277,839	307,283,040	146,132,742	8.35	3.97
1928	35,674,706,558	294,331,503	142,396,567	8.25	3.99
1927	36,000,453,150	303,655,210	145,310,213	8.43	4.04
1926	37,734,640,122	313,454,767	148,314,922	8.31	3.93
1925	35,929,489,417	306,647,925	146,988,731	8.53	4.09
1924	33,839,679,365	299,538,769	147,945,775	8.85	4.37
1923	40,016,478,299	354,692,697	165,023,950	8.86	4.12
1922	31,201,314,561	308,114,086	147,416,562	9.88	4.72
TOTAL 1936- 1939	103,587,463,658	696,829,705	352,901,758	6.73	3.41
TOTAL 1922- 1925	140,986,961,642	1,268,993,477	607,375,018	9.00	4.31
PER CENT OF IMPROVEMENT 4 YEARS 1936 - 1939 COMPARED WITH 4 YEARS 1922 - 1925				25.2	20.9

SOURCE: Revenue ton-miles - Annual Reports to Interstate Commerce Commission.

Freight operating and transportation expenses - Annual Reports to Interstate Commerce Commission.

Defendant's Exhibit No. 12 (Witness LeRoy B. Porter)
Nov. 25, 1940

THE NEW YORK CENTRAL RAILROAD COMPANY (Including all leased lines)

FREIGHT SERVICE OPERATING AVERAGES
CALENDAR YEARS 1922, 1924, 1926, 1928, 1930, 1932, 1934, 1936, 1938 AND 1939

LINE NO. (a)	ITEM (b)	1922 (c)	1924 (d)	1926 (e)	1928 (f)	1930 (g)	1932 (h)	1934 (i)	1936 (j)	1938 (k)	1939 (l)	PERCENT INCREASE 1939 OVER 1922 (m)
1	Miles of line operated in freight service,.....	11,361.75	11,357.74	11,381.87	11,364.82	11,315.66	11,379.51	11,321.00	11,154.09	11,004.52	10,939.95	Dec. 3.7
2	Freight train miles,.....	41,529,769	43,850,503	45,878,779	43,172,767	38,194,118	28,586,187	29,987,993	34,719,037	29,109,782	31,946,779	Dec. 23.1
3	Freight cars per freight train,.....	49.0	51.3	54.3	57.9	57.4	53.6	54.3	54.4	54.0	55.2	12.7
4	Net tons per freight train,.....	787	839	893	895	886	783	825	880	836	913	16.0
5	Average tractive power per locomotive (pounds),.....	38,378	41,378	43,608	45,285	44,712	45,884	47,324	47,584	47,692	47,726	24.4
6	Average capacity per freight carrying car (tons),.....	43.6	46.6	47.4	48.0	48.7	48.9	50.1	51.3	52.0	53.2	22.0
7	Freight train speed (miles per hour)	11.1	11.7	12.2	13.5	14.5	16.2	16.5	16.4	16.9	16.9	52.3
8	Gross ton-miles per freight train-hour,.....	20,321	22,471	25,219	29,159	31,155	32,099	34,052	34,514	35,806	37,184	83.0
9	Net ton-miles per freight train-hour	8,713	9,779	10,924	12,118	12,854	12,644	13,651	14,407	14,282	15,299	75.6
10	Gross ton-miles (exclusive of locomotives and tenders) per ton of fuel,.....	13,391	13,749	14,619	15,929	16,537	16,191	16,265	16,267	16,884	17,304	29.2

SOURCE: Item 1 - Mileage as reported in Interstate Commerce Commission Annual Reports, with inter-company duplications eliminated.

Items 2, 3, 4, 7 and 8 - Reports of Freight Train Performance, Form OS-A, filed with Interstate Commerce Commission.

Item 5 - Total tractive effort ÷ total steam locomotives available for service at close of each year as reported in Schedule 417 of Annual Report to the Interstate Commerce Commission.

Item 6 - Aggregate capacity of all freight carrying cars ÷ total number of such cars available for service at close of year, as reported in Schedule 417 of Annual Report to the Interstate Commerce Commission.

Item 9 - Net ton miles ÷ train hours as reported on Form OS-A to Interstate Commerce Commission.

Item 10- Gross ton-miles (cars, contents and cargoes) ÷ equated net tons of fuel consumed as reported to Interstate Commerce Commission in years 1922 to 1934, inclusive, on Form OS-A and as reported in years 1936, 1938 and 1939 on Forms OS-A and OS-E respectively.

Defendant's Exhibit No. 13 (Witness Alfred H. Wright)
Nov. 25, 1940

EXPLANATION OF SYMBOLS USED BELOW
UNDER HEADINGS "AVERAGE COMPOSITION"

A - Perishable loads
B - Other loads
C - Empty cars and includes caboose
D - Total all cars

NEW YORK CENTRAL RAILROAD

TYPICAL EXAMPLES OF FREIGHT TRAINS HANDLED

NAME OF RAILROAD	FROM	TO	DISTANCE (Miles)	PER DAY PERIOD STUDIED (Mo. & Yr.)	BUILDING GRADE	70 CARS OR LESS						71 CARS TO 100 CARS						101 CARS TO 125 CARS						
						NO. OF TRAINS	TYPE OF LOCOMOTIVE	AVERAGE COMPOSITION					NO. OF TRAINS	TYPE OF LOCOMOTIVE	AVERAGE COMPOSITION					NO. OF TRAINS	TYPE OF LOCOMOTIVE	AVERAGE		
								A	B	C	D	TONS			A	B	C	D	TONS			A	B	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)	(t)	(u)	(v)	(w)	(x)	
New York Central	Malone, N.Y.	Watertown, N.Y.	112	Sept. 1940	.76	3	Mikado	-	14	33	47	1,467	6	Mikado	1	21	59	81	2,448	1	Mikado	3	34	
	Watertown, N.Y.	Malone, N.Y.	112	Sept. 1940	.73	8	Mikado	-	37	18	55	2,735	2	Mikado	-	40	31	71	2,900	-	-	-	-	
	Watertown, N.Y.	Utica, N.Y.	88	Sept. 1940	.67	8	Mikado	-	31	19	50	2,038	1	Mikado	2	47	28	77	3,240	1	Mikado	2	66	
	Utica, N.Y.	Watertown, N.Y.	88	Sept. 1940	.83	4	Mikado	-	27	35	62	1,978	6	Mikado	-	32	52	84	2,666	-	-	-	-	
	Norwood, N.Y.	Watertown, N.Y.	75	Sept. 1940	.76	4	Mikado	2	27	28	57	1,899	4	Mikado	1	33	42	76	2,446	1	Mikado	1	55	
	Watertown, N.Y.	Norwood, N.Y.	75	Sept. 1940	.67	7	Mikado	2	43	8	53	2,473	2	Mikado	7	64	10	81	3,650	1	Mikado	1	64	
	Watertown, N.Y.	DeWitt, N.Y.	77	Sept. 1940	.67	3	Mohawk	3	49	13	65	3,033	12	Mohawk	1	49	29	79	3,046	3	Mohawk	-	36	
	DeWitt, N.Y.	Watertown, N.Y.	77	Sept. 1940	.80	12	Mohawk	2	51	4	57	2,656	7	Mohawk	3	74	4	81	2,478	1	Mohawk	-	96	
	Susp. Bridge, N.Y.	Lyons, N.Y.	127	Sept. 1940	.48	9	Mohawk	2	54	7	63	2,786	9	Mohawk	1	44	32	77	3,131	-	-	-	-	
	Lyons, N.Y.	Susp. Bridge, N.Y.	127	Sept. 1940	.59	13	Mohawk	-	49	8	57	2,946	6	Mohawk	-	50	30	80	4,103	-	-	-	-	
	Lyons, N.Y.	Susp. Bridge, N.Y.	127	Sept. 1940	.59	4	Hudson	1	46	13	60	3,144	1	Hudson	-	69	16	84	4,370	-	-	-	-	
	Lyons, N.Y.	Susp. Bridge, N.Y.	111	Sept. 1940	.70	2	Mohawk	-	52	8	60	3,659	6	Mohawk	-	64	17	81	4,399	1	Mohawk	-	27	
	Gardenville, N.Y.	DeWitt, N.Y.	149	Sept. 1940	.48	-	-	-	-	-	-	-	-	16	Mohawk	34	53	3	90	4,010	3	Mohawk	31	68
	DeWitt, N.Y.	Gardenville, N.Y.	149	Sept. 1940	.59	24	Mohawk	-	51	13	64	2,330	12	Mohawk	1	44	42	87	2,830	2	Mohawk	1	45	
	DeWitt, N.Y.	Gardenville, N.Y.	149	Sept. 1940	.59	4	Hudson	-	51	9	60	2,346	2	Hudson	1	62	18	81	2,951	-	-	-	-	
	DeWitt, N.Y.	Gardenville, N.Y.	149	Sept. 1940	.63	-	-	-	-	-	-	-	-	5	Mohawk	1	58	34	93	3,192	30	Mohawk	-	19
	Buffalo, N.Y.	DeWitt, N.Y.	154	Sept. 1940	.48	23	Mohawk	16	45	4	65	3,283	87	Mohawk	19	61	2	82	4,016	4	Mohawk	4	95	
	DeWitt, N.Y.	Buffalo, N.Y.	151	Sept. 1940	.59	6	Mohawk	1	26	37	64	2,018	3	Mohawk	2	29	43	74	2,292	-	-	-	-	
	DeWitt, N.Y.	Buffalo, N.Y.	151	Sept. 1940	.59	1	Hudson	-	25	44	69	2,026	-	-	-	-	-	-	-	-	-	-	-	
	DeWitt, N.Y.	Buffalo, N.Y.	151	Sept. 1940	.61	-	-	-	-	-	-	-	-	1	Mohawk	-	42	44	86	3,240	-	-	-	
	Rochester, N.Y.	DeWitt, N.Y.	86	Sept. 1940	.48	-	-	-	-	-	-	-	-	7	Mohawk	18	58	14	90	3,705	2	Mohawk	8	76
	DeWitt, N.Y.	Rochester, N.Y.	86	Sept. 1940	.59	1	Mohawk	-	31	11	42	2,020	-	-	-	-	-	-	-	-	-	-	-	
	Buffalo, N.Y.	Lyons, N.Y.	101	Sept. 1940	.48	1	Mohawk	-	51	15	66	3,190	9	Mohawk	3	57	25	85	3,243	-	-	-	-	
	Lyons, N.Y.	Buffalo, N.Y.	101	Sept. 1940	.63	1	Mohawk	-	50	5	55	3,000	-	-	-	-	-	-	-	-	-	-	-	
	Susp. Bridge, N.Y.	Syracuse, N.Y.	162	Sept. 1940	.48	5	Hudson	-	15	1	16	1,210	-	-	-	-	-	-	-	-	-	-	-	
	Susp. Bridge, N.Y.	Syracuse, N.Y.	162	Sept. 1940	.48	1	Mohawk	-	19	1	20	1,120	-	-	-	-	-	-	-	-	-	-	-	
	Susp. Bridge, N.Y.	Syracuse, N.Y.	162	Sept. 1940	.38	2	Hudson	-	17	1	18	1,233	-	-	-	-	-	-	-	-	-	-	-	
	Syracuse, N.Y.	Susp. Bridge, N.Y.	162	Sept. 1940	.59	7	Hudson	-	24	1	25	1,245	-	-	-	-	-	-	-	-	-	-	-	
	Syracuse, N.Y.	Susp. Bridge, N.Y.	162	Sept. 1940	.59	2	Mohawk	-	26	1	27	1,792	-	-	-	-	-	-	-	-	-	-	-	
	Susp. Bridge, N.Y.	DeWitt, N.Y.	163	Sept. 1940	.48	7	Mohawk	13	47	4	64	2,557	23	Mohawk	17	62	4	83	3,299	2	Mohawk	18	91	
	Susp. Bridge, N.Y.	DeWitt, N.Y.	179	Sept. 1940	.48	6	Mohawk	4	57	2	63	3,155	5	Mohawk	2	75	2	79	4,253	-	-	-	-	
	DeWitt, N.Y.	Susp. Bridge, N.Y.	163	Sept. 1940	.70	20	Mohawk	-	44	16	60	2,039	9	Mohawk	1	45	32	78	2,519	6	Mohawk	-	3	
	DeWitt, N.Y.	Susp. Bridge, N.Y.	179	Sept. 1940	.59	8	Mohawk	6	30	9	45	1,539	5	Mohawk	-	48	36	84	3,821	-	-	-	-	
	DeWitt, N.Y.	Susp. Bridge, N.Y.	179	Sept. 1940	.63	-	-	-	-	-	-	-	-	2	Mohawk	-	52	36	88	3,042	-	-	-	
	DeWitt, N.Y.	Susp. Bridge, N.Y.	163	Sept. 1940	.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	Hudson	-	-	
	DeWitt, N.Y.	Susp. Bridge, N.Y.	179	Sept. 1940	.59	1	Hudson	-	26	1	27	895	-	-	-	-	-	-	-	-	-	-	-	
Rochester, N.Y.	Lyons, N.Y.	35	Sept. 1940	.48	8	Mohawk	6	44	6	56	2,311	1	Mohawk	12	67	1	80	3,640	-	-	-	-		
Lyons, N.Y.	Gardenville, N.Y.	98	Sept. 1940	.55	-	-	-	-	-	-	-	-	5	Mohawk	-	31	63	94	3,380	4	Mohawk	-	18	
Lyons, N.Y.	Gardenville, N.Y.	98	Sept. 1940	.59	-	-	-	-	-	-	-	-	1	Hudson	-	12	84	96	2,532	-	-	-		
Lyons, N.Y.	Gardenville, N.Y.	98	Sept. 1940	.63	-	-	-	-	-	-	-	-	1	Mohawk	-	13	81	94	2,780	-	-	-		
Rochester, N.Y.	Gardenville, N.Y.	64	Sept. 1940	.59	2	Mohawk	-	8	57	65	1,644	-	-	-	-	-	-	-	-	-	-	-		
Rochester, N.Y.	Buffalo, N.Y.	66	Sept. 1940	.59	10	Mohawk	-	24	25	49	1,777	2	Mohawk	-	7	71	78	1,877	-	-	-	-		
Rochester, N.Y.	Buffalo, N.Y.	66	Sept. 1940	.59	2	Hudson	-	72	33	65	2,407	1	Hudson	-	10	76	86	2,234	-	-	-	-		
Buffalo, N.Y.	Rochester, N.Y.	66	Sept. 1940	.38	8	Mohawk	1	46	2	49	2,523	-	-	-	-	-	-	-	-	-	-	-		
Buffalo, N.Y.	Syracuse, N.Y.	154	Sept. 1940	.48	-	-	-	-	-	-	-	-	4	Mohawk	7	77	9	93	4,483	-	-	-		
Buffalo, N.Y.	Lyons, N.Y.	101	Sept. 1940	.48	-	-	-	-	-	-	-	-	1	Mohawk	4	58	38	100	4,060	-	-	-		
Gardenville, N.Y.	Susp. Bridge, N.Y.	34	Sept. 1940	.90	6	Mohawk	-	10	41	51	1,223	4	Mohawk	-	2	80	82	1,660	5	Mohawk	-	43		
Gardenville, N.Y.	Susp. Bridge, N.Y.	34	Sept. 1940	.90	1	Mikado	-	49	13	62	1,760	3	Mikado	-	1	76	77	1,647	-	-	-	-		

101 CARS TO 125 CARS										126 CARS AND OVER										MAXIMUM CARS PER TRAIN (11)
CONSIST			NO. OF TRAINS (u)	TYPE OF LOCOMOTIVE (v)	AVERAGE CONSIST					NO. OF TRAINS (bb)	TYPE OF LOCOMOTIVE (cc)	AVERAGE CONSIST					TONS (hh)			
(a)	(b)	(c)			(w)	(x)	(y)	(z)	(aa)			(d)	(e)	(f)	(g)	(h)				
9	81	2,448	1	Mikado	3	34	68	105	3,375	-	-	-	-	-	-	-	105			
2	71	2,900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71			
8	77	3,240	1	Mikado	2	66	49	117	4,520	-	-	-	-	-	-	-	117			
2	84	2,666	-	-	-	-	-	-	-	-	-	-	-	-	-	-	96			
2	76	2,446	1	Mikado	1	55	47	103	3,705	-	-	-	-	-	-	-	103			
0	81	3,650	1	Mikado	1	64	37	102	4,600	-	-	-	-	-	-	-	102			
9	79	3,046	3	Mohawk	-	36	84	120	3,473	-	-	-	-	-	-	-	122			
4	81	2,478	1	Mohawk	-	96	6	102	5,369	-	-	-	-	-	-	-	102			
2	77	3,131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94			
0	80	4,103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87			
2	84	4,370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84			
7	81	4,399	1	Mohawk	-	27	77	104	3,160	-	-	-	-	-	-	-	104			
3	80	4,010	3	Mohawk	31	68	5	104	4,381	-	-	-	-	-	-	-	109			
2	87	2,830	2	Mohawk	1	45	57	103	3,154	1	Mohawk	-	130	130	3,405	130				
8	81	2,951	-	-	-	-	-	-	-	2	Hudson	-	128	128	2,823	128				
4	93	3,192	30	Mohawk	-	19	99	118	3,036	31	Mohawk	-	125	128	3,086	131				
2	82	4,016	4	Mohawk	4	95	4	103	5,096	-	-	-	-	-	-	-	104			
3	74	2,292	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77			
1	86	3,240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69			
4	90	3,705	2	Mohawk	8	76	20	104	4,405	-	-	-	-	-	-	-	86			
5	85	3,643	-	-	-	-	-	-	-	-	-	-	-	-	-	-	107			
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	143			
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100			
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	95			
1	83	3,299	2	Mohawk	18	91	3	112	4,405	-	-	-	-	-	-	-	18			
2	79	4,253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20			
2	78	2,519	6	Mohawk	-	3	112	11	2,895	-	-	-	-	-	-	-	19			
0	84	3,321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27			
1	88	3,042	1	Hudson	-	-	115	11	2,760	-	-	-	-	-	-	-	27			
1	80	3,640	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80			
1	94	3,380	4	Mohawk	-	18	92	110	3,091	-	-	-	-	-	-	-	117			
1	96	2,532	-	-	-	-	-	-	-	-	-	-	-	-	-	-	96			
1	94	2,780	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94			
1	78	1,877	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84			
6	86	2,234	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86			
9	93	4,483	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67			
8	100	4,060	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99			
0	82	1,660	5	Mohawk	-	43	71	114	3,128	-	-	-	-	-	-	-	100			
6	77	1,647	-	-	-	-	-	-	-	-	-	-	-	-	-	-	122			
1	78	2,427	6	Mohawk	17	95	112	103	3,503	1	Mohawk	2	20	109	131	3,060	85			
1	-	-	3	Mikado	22	81	-	-	2,513	-	-	-	-	-	-	-	131			
1	83	3,635	9	Mohawk	-	55	26	111	6,182	2	Mohawk	-	105	22	127	8,075	128			
1	84	2,486	1	Mohawk	-	1	117	118	2,605	1	Mohawk	-	124	126	126	2,530	126			
8	89	6,979	1	Mohawk	114	11	125	9,040	2	Mohawk	-	-	2	126	10,085	126				
1	79	1,726	3	Mohawk	-	-	119	119	2,591	-	-	-	-	-	-	-	125			
1	71	1,420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71			
2	87	5,898	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55			
3	83	2,738	9	Mohawk	-	1	118	119	2,630	5	Mohawk	-	-	130	130	2,839	131			
8	86	4,317	2	Mohawk	30	86	-	116	4,120	-	-	-	-	-	-	-	36			
9	81	3,015	-	-	25	88	-	113	3,248	-	-	-	-	-	-	-	119			
1	75	1,635	-	-	-	103	-	103	2,200	-	-	-	-	-	-	-	120			
1	75	1,591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	103			
1	75	1,591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77			

7	2	FROM (b)	TO (c)	DIS- TANCE (Miles) (d)	TEN DAY PERIOD STARTED (Mo. & Yr.) (e)	MILING GRADE (f)	70 CARS OR LESS					71 CARS TO 100 CARS					101 CARS TO 125 CARS										
							NO. OF TRAINS (g)	TYPE OF LOCOMOTIVE (h)	AVERAGE CONSIST				NO. OF TRAINS (i)	TYPE OF LOCOMOTIVE (j)	AVERAGE CONSIST				NO. OF TRAINS (k)	TYPE OF LOCOMOTIVE (l)	AVERAGE CONSIST						
									A (1)	B (2)	C (3)	D (4)			TONS (m)	A (p)	B (q)	C (r)			D (s)	TONS (n)	A (v)	B (w)	C (x)	D (y)	TONS (ao)
		Malone, N.Y.	Watertown, N.Y.	112	Sept. 1940	.76	3	Mikado	-	14	33	47	1,467	6	Mikado	1	23	59	81	2,448	1	Mikado	3	34	68	105	3,375
		Watertown, N.Y.	Malone, N.Y.	112	Sept. 1940	.73	8	Mikado	-	37	18	55	2,735	2	Mikado	-	40	31	71	2,900	-	Mikado	-	-	-	-	-
		Watertown, N.Y.	Utica, N.Y.	88	Sept. 1940	.67	8	Mikado	-	31	19	50	2,038	1	Mikado	2	47	28	77	3,240	1	Mikado	2	66	49	117	4,530
		Utica, N.Y.	Watertown, N.Y.	88	Sept. 1940	.83	4	Mikado	-	27	35	62	1,978	6	Mikado	-	32	52	84	2,666	-	Mikado	-	-	-	-	-
		Norwood, N.Y.	Watertown, N.Y.	75	Sept. 1940	.76	4	Mikado	2	27	28	57	1,899	4	Mikado	1	33	42	76	2,446	1	Mikado	1	55	47	103	3,705
		Watertown, N.Y.	Norwood, N.Y.	75	Sept. 1940	.67	7	Mikado	2	43	8	53	2,473	2	Mikado	7	64	10	81	3,650	1	Mikado	1	64	37	102	4,600
		Watertown, N.Y.	DeWitt, N.Y.	77	Sept. 1940	.67	3	Mohawk	3	49	13	65	3,033	12	Mohawk	1	49	29	79	3,046	3	Mohawk	-	36	84	120	3,473
		DeWitt, N.Y.	Watertown, N.Y.	77	Sept. 1940	.80	12	Mohawk	2	51	4	57	2,956	7	Mohawk	3	74	4	81	2,478	1	Mohawk	-	96	6	102	5,369
		Susp. Bridge, N.Y.	Lyons, N.Y.	127	Sept. 1940	.48	9	Mohawk	2	54	7	63	2,786	9	Mohawk	1	44	32	77	3,131	-	-	-	-	-	-	-
		Lyons, N.Y.	Susp. Bridge, N.Y.	127	Sept. 1940	.59	13	Mohawk	-	49	8	57	2,946	6	Mohawk	-	50	30	80	4,103	-	-	-	-	-	-	-
		Lyons, N.Y.	Susp. Bridge, N.Y.	127	Sept. 1940	.59	4	Hudson	1	46	13	60	3,148	1	Hudson	-	69	15	84	4,370	-	-	-	-	-	-	-
		Lyons, N.Y.	Susp. Bridge, N.Y.	111	Sept. 1940	.70	8	Mohawk	-	52	8	60	3,559	6	Mohawk	-	64	17	81	4,399	1	Mohawk	-	27	77	104	3,160
		Gardenville, N.Y.	DeWitt, N.Y.	149	Sept. 1940	.48	24	-	-	-	-	-	-	16	Mohawk	34	53	3	90	4,010	3	Mohawk	31	68	5	104	4,351
		DeWitt, N.Y.	Gardenville, N.Y.	149	Sept. 1940	.59	4	Mohawk	-	51	13	64	2,330	12	Mohawk	1	44	42	87	2,830	2	Mohawk	1	45	57	103	3,154
		DeWitt, N.Y.	Gardenville, N.Y.	149	Sept. 1940	.59	4	Hudson	-	51	9	60	2,346	2	Hudson	1	62	18	81	2,951	-	-	-	-	-	-	-
		DeWitt, N.Y.	Gardenville, N.Y.	149	Sept. 1940	.63	-	-	-	-	-	-	-	5	Mohawk	1	68	34	93	3,192	30	Mohawk	-	19	99	118	3,036
		Buffalo, N.Y.	DeWitt, N.Y.	154	Sept. 1940	.48	23	Mohawk	16	45	4	65	3,283	87	Mohawk	19	61	2	82	4,016	4	Mohawk	4	95	4	103	5,096
		DeWitt, N.Y.	Buffalo, N.Y.	151	Sept. 1940	.59	6	Mohawk	1	26	37	64	2,018	3	Mohawk	2	29	43	74	2,292	-	-	-	-	-	-	-
		DeWitt, N.Y.	Buffalo, N.Y.	151	Sept. 1940	.59	1	Hudson	-	25	44	69	2,026	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		DeWitt, N.Y.	Buffalo, N.Y.	151	Sept. 1940	.63	-	-	-	-	-	-	-	1	Mohawk	-	42	44	86	3,240	-	Mohawk	-	-	-	-	-
		Rochester, N.Y.	DeWitt, N.Y.	86	Sept. 1940	.48	-	-	-	-	-	-	-	7	Mohawk	18	58	14	90	3,705	2	Mohawk	8	76	20	104	4,405
		DeWitt, N.Y.	Rochester, N.Y.	86	Sept. 1940	.59	1	Mohawk	-	31	11	42	2,020	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Buffalo, N.Y.	Lyons, N.Y.	101	Sept. 1940	.48	1	Mohawk	-	51	15	66	3,190	9	Mohawk	3	57	25	85	3,243	-	-	-	-	-	-	-
		Lyons, N.Y.	Buffalo, N.Y.	101	Sept. 1940	.63	1	Mohawk	-	50	5	55	3,000	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Susp. Bridge, N.Y.	Syracuse, N.Y.	162	Sept. 1940	.48	5	Hudson	-	15	1	16	1,210	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Susp. Bridge, N.Y.	Syracuse, N.Y.	162	Sept. 1940	.48	1	Mohawk	-	19	1	20	1,120	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Susp. Bridge, N.Y.	Syracuse, N.Y.	162	Sept. 1940	.38	2	Hudson	-	17	1	18	1,233	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Syracuse, N.Y.	Susp. Bridge, N.Y.	162	Sept. 1940	.59	7	Hudson	-	24	1	25	1,245	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Syracuse, N.Y.	Susp. Bridge, N.Y.	162	Sept. 1940	.59	2	Mohawk	-	26	1	27	1,192	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Susp. Bridge, N.Y.	DeWitt, N.Y.	163	Sept. 1940	.48	7	Mohawk	13	47	4	64	2,557	23	Mohawk	17	62	4	83	3,299	2	Mohawk	18	91	3	112	4,405
		Susp. Bridge, N.Y.	DeWitt, N.Y.	179	Sept. 1940	.48	6	Mohawk	4	57	2	63	3,155	5	Mohawk	2	75	2	79	4,253	-	Mohawk	-	-	-	-	-
		DeWitt, N.Y.	Susp. Bridge, N.Y.	163	Sept. 1940	.70	20	Mohawk	-	44	16	60	2,039	9	Mohawk	1	45	32	78	2,519	6	Mohawk	-	3	112	17	2,895
		DeWitt, N.Y.	Susp. Bridge, N.Y.	179	Sept. 1940	.59	8	Mohawk	6	30	9	45	1,539	5	Mohawk	-	48	36	84	3,821	-	Mohawk	-	-	-	-	-
		DeWitt, N.Y.	Susp. Bridge, N.Y.	179	Sept. 1940	.63	-	-	-	-	-	-	-	2	Mohawk	-	52	36	88	3,042	-	Mohawk	-	-	-	-	-
		DeWitt, N.Y.	Susp. Bridge, N.Y.	163	Sept. 1940	.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	Hudson	-	-	115	17	2,760
		DeWitt, N.Y.	Susp. Bridge, N.Y.	179	Sept. 1940	.59	1	Hudson	-	26	1	27	895	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Rochester, N.Y.	Lyons, N.Y.	35	Sept. 1940	.48	8	Mohawk	6	44	6	56	2,311	1	Mohawk	12	67	1	80	3,640	-	Mohawk	-	-	-	-	-
		Lyons, N.Y.	Gardenville, N.Y.	98	Sept. 1940	.59	-	-	-	-	-	-	-	5	Mohawk	-	31	63	94	3,380	4	Mohawk	-	18	92	110	3,091
		Lyons, N.Y.	Gardenville, N.Y.	98	Sept. 1940	.59	-	-	-	-	-	-	-	1	Hudson	-	12	84	96	2,532	-	-	-	-	-	-	-
		Lyons, N.Y.	Gardenville, N.Y.	98	Sept. 1940	.63	-	-	-	-	-	-	-	1	Mohawk	-	13	81	94	2,780	-	-	-	-	-	-	-
		Rochester, N.Y.	Gardenville, N.Y.	64	Sept. 1940	.59	2	Mohawk	-	8	57	65	1,644	-	-	-	-	-	-	-	-	-	-	-	-	-	

NAME OF RAILROAD (a)	FROM (b)	TO (c)	DIS- TANCE (Miles) (d)	TEN DAY PERIOD STUDIED (Mo. & Yr.) (e)	RULING GRADE (f)	NO. OF TRAINS (g)	TYPE OF LOCOMOTIVE (h)	70 CARS OR LESS					NO. OF TRAINS (n)	TYPE OF LOCOMOTIVE (o)	71 CARS TO 100 CARS					NO. OF TRAINS (u)	TYPE OF LOCOMOTIVE (v)	101 CARS TO 125 CARS					TONE (aa)		
								AVERAGE CONSIST							AVERAGE CONSIST							AVERAGE CONSIST							
								A	B	C	D	TONE (a)			A	B	C	D	TONE (c)			A	B	C	D	TONE (e)			
New York Central	Southport, N.Y.	DeWitt, N.Y.	122	Sept. 1940	.3	2	Mohawk	-	52	1	53	3,745	3	Mohawk	-	80	1	81	5,777	-	-	-	-	-	-	-	-	-	
	Southport, N.Y.	DeWitt, N.Y.	122	Sept. 1940	.3	2	P.R.R.	-	47	1	48	3,470	2	-	-	79	1	80	5,601	-	-	-	-	-	-	-	-	-	
	Avia, Pa.	Cherry Tree, Pa.	145	Sept. 1940	1.05	-	-	-	-	-	-	-	7	Mikado	-	-	2	78	80	1,805	1	Mikado	-	-	1	111	112	2.5	
	Avia, Pa.	Cherry Tree, Pa.	145	Sept. 1940	1.05	-	-	-	-	-	-	-	5	Mohawk	-	-	1	96	97	2,072	-	-	-	-	-	-	-	-	
	Cherry Tree, Pa.	Avia, Pa.	145	Sept. 1940	.3	1	Mohawk	-	39	2	41	2,544	3	Mohawk	-	-	84	1	85	2,832	3	Mohawk	-	-	119	1	120	9.7	
	Cherry Tree, Pa.	Avia, Pa.	145	Sept. 1940	.3	2	Mikado	-	31	5	39	2,530	3	Mikado	-	-	87	1	88	2,767	3	Mikado	-	-	109	1	110	8.5	
	Newberry Jct., Pa.	Cherry Tree, Pa.	161	Sept. 1940	1.05	1	Mohawk	-	2	66	68	1,490	8	Mohawk	-	-	10	79	89	2,409	4	Mohawk	-	-	2	106	108	2.3	
	Cherry Tree, Pa.	Newberry Jct., Pa.	161	Sept. 1940	.68	1	Mohawk	-	-	-	-	-	5	Mohawk	-	-	84	2	86	6,338	5	Mohawk	-	-	114	4	116	8.0	
	Newberry Jct., Pa.	Clearfield, Pa.	117	Sept. 1940	1.05	12	Mohawk	-	32	28	60	2,118	7	Mohawk	-	-	12	80	92	2,353	1	Mohawk	-	-	40	70	110	4.4	
	Newberry Jct., Pa.	Clearfield, Pa.	117	Sept. 1940	1.05	1	Mikado	-	34	28	62	2,460	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Clearfield, Pa.	Newberry Jct., Pa.	117	Sept. 1940	.68	2	Mohawk	2	37	13	52	2,391	9	Mohawk	1	72	12	85	5,150	1	Mohawk	-	-	107	8	115	8.9	-	
	Clearfield, Pa.	Newberry Jct., Pa.	117	Sept. 1940	.68	-	-	-	-	-	-	-	2	Mikado	-	-	73	15	88	4,829	-	-	-	-	-	-	-	-	
	Avia, Pa.	Clearfield, Pa.	102	Sept. 1940	1.05	-	-	-	-	-	-	-	7	Mikado	-	-	-	79	79	1,767	-	-	-	-	-	-	-	-	
	Clearfield, Pa.	Avia, Pa.	102	Sept. 1940	.3	2	Mikado	-	22	11	33	1,700	-	-	-	-	-	-	-	-	1	Mohawk	-	-	111	1	112	9.1	
	Clearfield, Pa.	Avia, Pa.	102	Sept. 1940	.3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Selkirk, N.Y.	DeWitt, N.Y.	142	Sept. 1940	.58	21	Mohawk	5	36	11	52	1,891	45	Mohawk	1	49	34	84	2,733	19	Mohawk	-	-	15	99	114	2.8	-	
	DeWitt, N.Y.	Selkirk, N.Y.	142	Sept. 1940	.51	19	Mohawk	1	58	2	61	2,659	131	Mohawk	3	97	4	84	4,200	23	Mohawk	-	-	93	6	109	4.9	-	
	Mechanicville, N.Y.	DeWitt, N.Y.	142	Sept. 1940	.98	1	Mohawk	-	5	65	70	1,817	7	Mohawk	-	-	27	67	94	2,604	13	Mohawk	-	-	24	80	104	2.7	
	DeWitt, N.Y.	Mechanicville, N.Y.	142	Sept. 1940	.54	3	Mohawk	2	55	1	58	2,778	13	Mohawk	6	81	2	89	4,217	3	Mohawk	-	-	99	3	108	5.1	-	
	Rensselaer, N.Y.	DeWitt, N.Y.	142	Sept. 1940	1.63	2	Mohawk	-	40	26	66	1,941	6	Mohawk	-	-	44	36	80	2,975	-	-	-	-	-	-	-	-	
	DeWitt, N.Y.	Rensselaer, N.Y.	142	Sept. 1940	.86	1	Mohawk	3	41	15	59	2,175	17	Mohawk	4	75	9	89	4,410	1	Mohawk	-	-	85	22	110	5.4	-	
	Rensselaer, N.Y.	Syracuse, N.Y.	147	Sept. 1940	1.63	2	Mohawk	-	34	2	36	1,849	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Rensselaer, N.Y.	Syracuse, N.Y.	147	Sept. 1940	1.63	6	Hudson	-	32	2	34	1,650	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Syracuse, N.Y.	Rensselaer, N.Y.	147	Sept. 1940	.86	8	Hudson	-	29	2	31	1,611	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	West Albany, N.Y.	DeWitt, N.Y.	139	Sept. 1940	.61	-	-	-	-	-	-	-	3	Mohawk	-	-	25	57	82	2,332	5	Mohawk	-	-	45	66	111	3.5	
	Utica, N.Y.	Selkirk, N.Y.	95	Sept. 1940	.39	6	Mohawk	-	52	7	59	2,116	3	Mohawk	-	-	78	6	84	3,019	1	Mohawk	-	-	93	12	105	3.3	
	Selkirk, N.Y.	Utica, N.Y.	95	Sept. 1940	.56	3	Mohawk	-	34	13	47	1,973	2	Mohawk	-	-	38	47	81	2,367	2	Mohawk	-	-	62	28	110	3.9	
	Albany, N.Y.	Weehawken, N.J.	142	Sept. 1940	.59	4	Mikado	-	37	24	61	1,970	2	Mikado	-	-	53	28	81	2,690	-	-	-	-	-	-	-	-	
	Weehawken, N.J.	Albany, N.Y.	142	Sept. 1940	1.04	6	Mikado	20	18	1	39	1,662	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Selkirk Jct., N.Y.	Weehawken, N.Y.	133	Sept. 1940	.59	26	Mikado	1	41	14	56	2,430	27	Mikado	2	61	19	82	3,731	3	Mikado	-	-	77	87	111	4.7	-	
	Weehawken, N.J.	Selkirk Jct., N.Y.	133	Sept. 1940	1.04	41	Mikado	1	39	14	54	2,345	13	Mikado	-	-	38	46	84	3,300	15	Mikado	-	-	11	96	107	3.2	
	Rensselaer, N.Y.	33rd Street, N.Y.	142	Sept. 1940	.83	9	Hudson	-	28	1	29	1,426	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	33rd Street, N.Y.	Rensselaer, N.Y.	142	Sept. 1940	1.29	2	Mohawk	-	34	1	35	1,860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	33rd Street, N.Y.	Rensselaer, N.Y.	142	Sept. 1940	1.39	6	Hudson	-	30	1	31	1,836	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Selkirk, N.Y.	72nd Street, N.Y.	136	Sept. 1940	.65	25	Mohawk	2	51	5	58	2,444	24	Mohawk	4	73	6	83	3,827	8	Mohawk	-	-	94	2	105	4.5	-	
	72nd Street, N.Y.	Selkirk, N.Y.	136	Sept. 1940	1.00	-	-	-	-	-	-	-	26	Mohawk	-	-	38	48	86	2,748	10	Mohawk	-	-	16	100	116	3.0	-
	Troy, N.Y.	72nd Street, N.Y.	146	Sept. 1940	.65	8	Mohawk	-	43	10	53	2,308	1	Mohawk	1	46	31	78	2,802	-	-	-	-	-	-	-	-	-	
	Troy, N.Y.	72nd Street, N.Y.	146	Sept. 1940	.65	-	-	-	-	-	-	-	1	Hudson	1	51	23	75	3,952	-	-	-	-	-	-	-	-	-	
	72nd Street, N.Y.	Troy, N.Y.	146	Sept. 1940	.74	3	Mohawk	-	44	19	63	2,587	5	Mohawk	1	65	18	84	3,256	-	-	-	-	-	-	-	-	-	
	Selkirk, N.Y.	Westchester Ave., N.Y.	133	Sept. 1940	.35	1	Mohawk	-	49	1	50	2,449	1	Mohawk	6	78	1	85	3,712	-	-	-	-	-	-	-	-	-	
	Westchester Ave., N.Y.	Selkirk, N.Y.	133	Sept. 1940	1.00	-	-	-	-	-	-	-	1	Mohawk	-	-	15	76	91	2,100	8	Mohawk	-	-	18	88	106	2.7	
	Barrytown, N.Y.	Selkirk, N.Y.	136	Sept. 1940	1.00	-	-	-	-	-	-	-	6	Mohawk	-	-	35	52	87	2,522	-	-	-	-	-	-	-	-	
	Chatham, N.Y.	60th Street, N.Y.	135	Sept. 1940	.75	10	Pacific	13	4	2	19	1,109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	60th Street, N.Y.	Chatham, N.Y.	135	Sept. 1940	.80	10	Pacific	-	4	19	23	903	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Chatham, N.Y.	30th Street, N.Y.	137	Sept. 1940	.75	18	Pacific	4	16	5	25	1,015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	30th Street, N.Y.	Chatham, N.Y.	137	Sept. 1940	.80	18	Pacific	-	17	12	29	1,185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TOTAL TRAINS			1,810			685	Trains 70 cars or less						787	Trains 71 cars to 100 cars						242	Trains 101 cars to 125 cars								
PER CENT OF ALL TRAINS			100			37.8							43.5							13.4									
AVERAGE CARS PER TRAIN			78			51							84							112									

CONSIST		NO. OF TRAINS (u)	TYPE OF LOCOMOTIVE (v)	101 CARS TO 125 CARS AVERAGE CONSIST					NO. OF TRAINS (bb)	TYPE OF LOCOMOTIVE (cc)	126 CARS AND OVER AVERAGE CONSIST					MAXIMUM CARS PER TRAINS (ii)	
D. (a)	TONS (t)			A (w)	B (x)	C (y)	D (z)	TONS (aa)			A (dd)	B (ee)	C (ff)	D (gg)	TONS (hh)		
81	5,777	-	-	-	-	-	-	-	-	-	-	-	-	-	83		
80	5,501	-	-	-	-	-	-	-	-	-	-	-	-	-	85		
80	1,805	1	Mikado	-	1	111	112	2,520	1	Mikado	-	2	124	126	126		
97	2,072	-	-	-	-	-	-	-	-	-	-	-	-	-	100		
85	6,832	3	Mohawk	-	119	1	120	9,733	-	-	-	-	-	-	124		
78	6,767	1	Mikado	-	109	1	110	8,538	-	-	-	-	-	-	112		
89	2,409	4	Mohawk	-	-	2	106	2,332	-	-	-	-	-	-	123		
86	6,338	5	Mohawk	-	114	1	118	6,993	5	Mohawk	-	125	1	126	126		
92	2,353	1	Mohawk	-	40	70	110	4,495	-	-	-	-	-	-	110		
85	5,150	1	Mohawk	-	107	8	110	8,968	1	Mohawk	-	113	13	126	62		
88	4,629	-	-	-	-	-	-	-	-	-	-	-	-	-	126		
79	1,767	-	-	-	-	-	-	-	-	-	-	-	-	-	95		
-	-	1	Mohawk	-	111	1	112	9,196	-	-	-	-	-	-	86		
84	2,733	19	Mohawk	-	15	99	114	2,651	36	Mohawk	-	2	127	129	112		
84	1,200	23	Mohawk	10	93	6	109	4,977	-	-	-	-	-	-	131		
94	2,604	13	Mohawk	-	2	80	104	2,763	-	-	-	-	-	-	125		
89	4,217	3	Mohawk	-	-	99	3	108	5,115	1	Mohawk	1	124	1	113		
80	2,670	-	-	-	8	-	-	-	-	-	-	-	-	-	126		
89	4,410	1	Mohawk	-	85	27	110	5,442	-	-	-	-	-	-	85		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40		
82	2,332	5	Mohawk	-	45	66	111	3,524	1	Mohawk	-	47	83	130	130		
84	3,019	1	Mohawk	-	92	12	105	3,328	-	-	-	-	-	-	105		
81	2,367	2	Mohawk	-	82	28	110	3,902	-	-	-	-	-	-	116		
81	2,690	-	-	-	-	-	-	-	-	-	-	-	-	-	89		
82	3,731	3	Mikado	-	77	27	111	4,761	-	-	-	-	-	-	66		
84	3,300	15	Mikado	-	11	96	107	3,285	2	Mikado	-	28	103	131	119		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35		
83	3,827	8	Mohawk	9	94	2	105	4,502	-	-	-	-	-	-	33		
86	2,748	10	Mohawk	-	16	100	116	3,028	3	Mohawk	-	12	115	127	113		
78	2,802	-	-	-	-	-	-	-	-	-	-	-	-	-	127		
75	3,952	-	-	-	-	-	-	-	-	-	-	-	-	-	78		
84	3,256	-	-	-	-	-	-	-	-	-	-	-	-	-	75		
85	3,712	-	-	-	-	-	-	-	-	-	-	-	-	-	97		
91	2,100	8	Mohawk	-	18	88	106	2,716	-	-	-	-	-	-	85		
87	2,522	-	-	-	-	-	-	-	-	-	-	-	-	-	121		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99		
242		Trains 101 cars to 125 cars							96	Trains 126 cars and over							
13.4									5.3								
112									128								

Defendant's Exhibit No. 15 (Witness J.H. Parmelee)
Nov. 26, 1940

GROSS EXPENDITURES FOR ADDITIONS AND BETTERMENTS TO RAILWAY PROPERTY

Railways of Class I* in the United States

Year (a)	Equipment (b)	Roadway and Structures (c)	General (d)	Total (e)
1922	\$247 938 857	\$222 722 260	\$3 361 652	\$474 022 769
1923	675 867 927	359 835 381	2 710 290	1 038 413 598
1924	513 812 571	382 393 559	6 551 694	902 757 824
1925	361 766 402	389 118 732	2 709 900	753 595 034
1926	379 617 126	448 975 693	2 775 858	831 368 677
1927	307 592 075	449 460 655	6 947 635	764 000 365
1928	243 762 380	418 497 065	6 085 998	668 345 443
1929	325 558 388	499 840 689	4 023 532	829 422 609
1930	335 321 987	459 955 274	5 936 679	801 213 940
Total 1922-30	\$3 391 237 713	\$3 630 799 308	\$41 103 238	\$7 063 140 259
1931	\$80 427 490	\$227 753 692	\$3 617 919	\$311 799 101
1932	46 072 570	112 911 101	3 758 497	162 742 168
1933	18 778 389	87 024 597	Cr. 255 841	105 547 145
1934	69 510 527	106 820 589	2 951 173	179 282 289
1935	82 788 441	106 507 359	755 338	190 051 138
1936	189 046 650	113 183 041	505 125	302 734 816
1937	365 798 535	170 754 214	1 360 069	537 912 818
1938	132 329 072	126 367 579	228 609	258 925 260
1939	143 227 607	107 446 549	617 859	251 292 015
Total 1931-39	\$1 127 979 281	\$1 158 768 721	\$13 538 748	\$2 300 286 750
Grand total	\$4 519 216 994	\$4 789 568 029	\$54 641 986	\$9 363 427 009

* Including lessor companies.

SOURCE: "Statistics of Railways in the United States," published by the Interstate Commerce Commission. Table 138 (old 47) and Table 139 (old 47-A), pages S-122-24, year 1938 and corresponding tables for prior years. Data for 1939 compiled by and on file in Bureau of Statistics, Interstate Commerce Commission.

Defendant's Exhibit No. 16 (Witness J.H. Parmelee)

Nov. 26, 1940

Defts. Ex. No.

AVERAGE REVENUE PER TON-MILE AND PER PASSENGER-MILE

Railways of Class I in the United States

Year (a)	Average revenue per ton-mile (cents) (b)	Average revenue per passenger-mile (cents) (c)
1939	0.973	1.840
1938	0.983	1.870
1937	0.935	1.790
1936	0.974	1.840
1935	0.988	1.930
1934	0.978	1.920
1933	0.999	2.010
1932	1.046	2.220
1931	1.051	2.510
1930	1.063	2.717
1929	1.076	2.808
1928	1.081	2.850
1927	1.080	2.896
1926	1.081	2.936
1925	1.097	2.938
1924	1.116	2.978
1923	1.116	3.018
1922	1.177	3.027

SOURCE: Annual issues of "Statistics of Railways in the United States," published by the Interstate Commerce Commission. Table 44 (old 25), pp. 6-40-41, year 1938, and corresponding tables for prior years. Data for 1939 compiled by and on file in Bureau of Statistics, Interstate Commerce Commission.

Defendant's Exhibit No. 17 (Witness J.H.Parmelee)
Nov. 26, 1940

NUMBER, MAN-HOURS AND EARNINGS OF EMPLOYEES
Railways of Class I in the United States

Year (a)	Average number (b)	Man-hours paid for (*) (c)	Total compensation (d)	Average earnings per employee	
				Per hour (cents) (e)	Per Year (f)
1939	987 675	2 488 634 605	\$1 863 333 736	74.9	\$1 887
1938	939 171	2 329 606 268	1 746 140 636	75.0	1 859
1937	1 114 663	2 799 538 883	1 985 446 718	70.9	1 781
1936	1 065 624	2 675 345 058	1 848 635 804	69.1	1 735
1935	994 371	2 397 352 876	1 643 878 510	68.6	1 653
1934	1 007 702	2 393 898 745	1 519 351 725	63.5	1 508
1933	971 196	2 233 044 895	1 403 840 833	62.9	1 445
1932	1 031 703	2 378 205 722	1 512 816 147	63.6	1 466
1931	1 258 719	3 039 110 118	2 094 994 379	68.9	1 664
1930	1 487 839	3 759 772 082	2 550 788 519	67.8	1 714
1929	1 660 850	4 346 821 546	2 896 566 351	66.6	1 744
1928	1 656 411	4 313 574 214	2 826 590 471	65.5	1 706
1927	1 735 105	4 519 281 339	2 910 182 848	64.4	1 677
1926	1 779 275	4 671 735 589	2 946 114 354	63.1	1 656
1925	1 744 311	4 531 361 471	2 860 599 920	63.1	1 640
1924	1 751 362	4 534 878 818	2 825 775 181	62.3	1 613
1923	1 857 674	4 928 651 132	3 004 071 882	61.0	1 617
1922	1 626 834	4 311 097 145	2 640 817 005	61.3	1 623

(*) Days worked by employees paid on a daily basis converted to hours at 8 hours per day.

SOURCE: Annual issues of "Statistics of Railways in the United States," published by the Interstate Commerce Commission. Table 67 (old 16), page 3-56, year 1938, and corresponding tables for prior years. Data for 1939 compiled by and on file in Bureau of Statistics, Interstate Commerce Commission.

Defendant's Exhibit No. 18 (Witness J.H. Parmelee)
Nov. 26, 1940

NUMBER, MAN-HOURS AND EARNINGS OF TRAIN AND ENGINE SERVICE EMPLOYEES

Railways of Class I in the United States

Year (a)	Average number (b)	Man-hours paid for (c)	Total compensation (d)	Average earnings per employee	
				Per hour (cents) (e)	Per year (f)
1939	209 749	574 960 356	\$529 858 642	92.2	\$2 526
1938	202 684	536 863 220	495 753 927	92.3	2 446
1937	236 231	639 028 323	561 927 671	87.9	2 379
1936	225 167	613 413 876	531 553 734	86.7	2 361
1935	206 995	537 884 384	458 646 256	85.3	2 216
1934	208 739	529 756 480	417 052 685	78.7	1 998
1933	199 312	501 123 177	389 512 357	77.7	1 954
1932	198 209	515 751 740	404 768 405	78.5	2 042
1931	238 831	643 183 321	554 079 025	86.1	2 320
1930	277 241	777 503 508	671 482 494	86.4	2 422
1929	306 566	895 867 619	775 977 397	86.6	2 531
1928	303 986	878 313 125	755 075 792	86.0	2 484
1927	315 143	910 815 553	765 392 961	84.0	2 429
1926	324 788	954 699 942	776 673 546	81.4	2 391
1925	315 344	892 238 616	747 863 011	83.8	2 372
1924	313 646	882 181 017	722 332 331	81.9	2 303
1923	337 228	974 237 926	768 287 069	78.9	2 278
1922	297 084	835 988 624	661 418 560	79.1	2 226

SOURCE: Annual issues of "Statistics of Railways in the United States," published by the Interstate Commerce Commission. Table 67 (old 16) page S-55, year 1928, and corresponding tables for prior years. Data for 1939 compiled by and on file in Bureau of Statistics, Interstate Commerce Commission.

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Defendant's Exhibit No. 19 (Witness J.H. Parmelee)
Nov. 26, 1940

INCOME ACCOUNT - RAILWAYS OF CLASS I IN THE UNITED STATES

Calendar Years 1929 to 1939

(Figures in millions of dollars)

ITEM (b)	1929 (a)	1930 (d)	1931 (e)	1932 (f)	1933 (g)	1934 (h)	1935 (i)	1936 (j)	1937 (k)	1938 (l)	1939 (m)
Total operating revenues	\$6,279.5	\$5,281.2	\$4,188.3	\$3,125.7	\$3,095.4	\$3,271.6	\$3,451.9	\$4,052.7	\$4,166.1	\$3,565.5	\$3,995.0
Total operating expenses	4,506.0	3,930.9	3,223.6	2,403.4	2,249.2	2,441.8	2,592.7	2,931.4	3,119.1	2,722.2	2,918.2
Operating ratio - per cent	71.76	74.43	76.98	76.87	72.66	74.64	75.11	72.33	74.87	76.35	73.05
Net operating revenue	1,773.5	1,350.3	964.7	723.3	846.2	829.8	859.2	1,121.3	1,047.0	843.3	1,076.8
Railway tax accruals	396.7	348.6	303.5	275.1	249.6	239.6	236.9	319.8	325.7	340.8	355.7
Uncollectible railway revenues	1.2	1.0	0.9	1.0	1.2	1.2	1.2	-	-	-	-
Equipment rents - net debit	95.4	99.8	99.2	85.1	85.0	89.8	85.7	94.5	95.0	94.9	96.5
Joint facility rents - net debit	28.5	32.0	35.5	35.8	36.1	36.5	35.6	39.7	36.1	34.7	35.8
Net railway operating income	1,251.7	868.9	525.6	326.3	474.3	462.7	499.8	667.3	590.2	372.9	588.8
Return on property investment - per cent	4.81	3.28	1.99	1.24	1.82	1.78	1.93	2.57	2.27	1.43	2.25
Other income	359.7	358.9	305.6	224.5	211.0	203.2	187.7	184.5	174.6	155.3	161.0
Total income	1,611.4	1,227.8	831.2	550.8	685.3	665.9	687.5	851.8	764.8	528.2	749.8
Interest on funded debt	498.6	496.3	500.1	500.0	498.3	481.9	476.5	458.9	454.0	447.2	438.3
Interest on unfunded debt	12.7	12.5	17.8	24.6	26.2	29.1	32.5	34.8	37.2	41.5	48.0
Cost for leased roads	177.4	170.6	150.7	138.0	150.2	151.2	149.3	149.7	147.8	136.1	143.7
Other deductions	25.9	24.5	27.8	27.4	16.5	20.6	21.7	23.8	27.7	26.9	26.6
Total deductions	714.6	763.9	696.4	690.0	691.2	682.8	680.0	687.2	666.7	651.7	656.6
Net income	\$896.8	\$523.9	\$234.8	Def \$139.2	Def \$5.9	Def \$16.9	\$7.5	\$164.6	\$98.1	Def \$123.5	\$93.2

SOURCE: Annual issues of "Statistics of Railways in the United States, published by the Interstate Commerce Commission, Table 113 (old 33), pp. 3-95-97, Year 1938, and corresponding tables for prior years. Data for 1939 compiled by and on file in Bureau of Statistics, Interstate Commerce Commission. Rate of return on property investment (item 10) computed on investment in road and equipment, including materials and supplies and cash.

Defendant's Exhibit No. 20 (Witness J.H. Parmelee)
Nov. 26, 1940

RAILWAYS OF CLASS I IN THE UNITED STATES

FREIGHT OPERATING AND FREIGHT TRANSPORTATION EXPENSES

Calendar years 1922 to 1939, inclusive

Year (a)	Revenue ton-miles (b)	Freight operating expenses (c)	Freight transportation expenses (d)	Averages per 1,000 revenue ton-miles	
				Freight operating expenses (e)	Freight transportation expenses (f)
1939	333 438 412 000	\$2 142 978 114	\$1 047 799 482	\$6.43	\$3.14
1938	290 084 371 000	1 967 626 335	987 483 307	6.78	3.40
1937	360 620 269 000	2 310 115 609	1 127 384 755	6.41	3.13
1936	339 245 826 000	2 171 315 564	1 047 174 407	6.40	3.09
1935	282 036 932 000	1 870 813 674	908 540 097	6.63	3.22
1934	268 710 507 000	1 766 073 788	843 496 586	6.57	3.14
1933	249 223 180 000	1 615 745 153	771 729 804	6.48	3.10
1932	233 977 009 000	1 693 926 052	813 456 213	7.24	3.48
1931	309 224 879 000	2 302 772 090	1 104 347 131	7.45	3.57
1930	383 449 588 000	2 848 168 947	1 348 598 585	7.43	3.52
1929	447 321 561 000	3 330 206 865	1 551 218 301	7.44	3.47
1928	432 915 185 000	3 254 038 603	1 533 152 191	7.52	3.54
1927	428 736 962 000	3 362 723 443	1 581 934 179	7.84	3.69
1926	443 746 487 000	3 455 818 287	1 625 378 810	7.79	3.66
1925	413 814 261 000	3 339 486 272	1 580 688 257	8.07	3.82
1924	388 415 312 000	3 312 213 685	1 585 555 112	8.53	4.08
1923	412 727 228 000	3 666 250 197	1 739 945 455	8.88	4.22
1922	339 285 348 000	3 224 809 492	1 566 744 960	9.50	4.62
Total 1936- 1939	1 323 388 878 000	8 592 035 622	4 209 841 951	6.49	3.18
Total 1922- 1925	1 554 242 149 000	13 542 759 646	6 472 933 784	8.71	4.16
Percent of improvement 4 years 1936-1939 compared with					

Year (a)	Revenue ton-miles (b)	Freight operating expenses (c)	Freight transportation expenses (d)	revenue	ton-miles
				Freight operating expenses (e)	Freight transportation expenses (f)
1939	333 438 412 000	\$2 142 978 114	\$1 047 799 482	\$6.43	\$3.14
1938	290 084 371 000	1 967 626 335	987 483 307	6.78	3.40
1937	360 620 269 000	2 310 115 609	1 127 384 755	6.41	3.13
1936	339 245 826 000	2 171 315 564	1 047 174 407	6.40	3.09
1935	282 036 932 000	1 870 813 674	908 540 097	6.63	3.22
1934	268 710 507 000	1 766 073 788	843 496 586	6.57	3.14
1933	249 223 180 000	1 615 745 153	771 729 804	6.48	3.10
1932	233 977 009 000	1 693 926 052	813 456 213	7.24	3.48
1931	309 224 879 000	2 302 772 090	1 104 347 131	7.45	3.57
1930	383 449 588 000	2 848 168 947	1 348 598 585	7.43	3.52
1929	447 321 561 000	3 330 206 865	1 551 218 301	7.44	3.47
1928	432 915 185 000	3 254 038 603	1 533 152 191	7.52	3.54
1927	428 736 962 000	3 362 723 443	1 581 934 179	7.84	3.69
1926	443 746 487 000	3 455 818 287	1 625 378 810	7.79	3.66
1925	413 814 261 000	3 339 486 272	1 580 688 257	8.07	3.82
1924	388 415 312 000	3 312 213 685	1 585 555 112	8.53	4.08
1923	412 727 228 000	3 666 250 197	1 739 945 455	8.88	4.22
1922	339 285 348 000	3 224 809 492	1 566 744 960	9.50	4.62
Total 1936- 1939	1 323 388 878 000	8 592 035 622	4 209 841 951	6.49	3.18
Total 1922- 1925	1 554 242 149 000	13 542 759 646	6 472 933 784	8.71	4.16
Percent of improvement 4 years 1936-1939 compared with 4 years 1922-1925				25.5	23.6

- SOURCE: Annual issues of "Statistics of Railways in the United States," published by the Interstate Commerce Commission as follows:
1. Revenue ton-miles from Table 44 (old 25), page S-41, year 1938, and corresponding tables for prior years.
 2. Freight operating expenses and freight transportation expenses from Table 86 (old 36), page S-79, year 1938, and corresponding tables for prior years.
 3. Data for 1939 compiled by and on file in Bureau of Statistics, Interstate Commerce Commission.
 4. Averages per 1,000 revenue ton-miles computed from basic data shown in adjoining columns.

Defendant s Exhibit No. 21 (Witness J.H. Parmelee)
Nov. 26, 1940

RAILWAYS OF CLASS I IN THE UNITED STATES
PASSENGER OPERATING AND PASSENGER TRANSPORTATION EXPENSES
Calendar years 1922 to 1939, inclusive

Year (a)	Passenger- train car-miles (b)	Passenger operating expenses (c)	Passenger transportation expenses (d)	Averages per passenger- train car-mile	
				Passenger operating expenses (cents) (e)	Passenger transportation expenses (cents) (f)
1939	2 976 512 696	\$764 661 373	\$364 807 341	25.69	12.26
1938	2 923 626 926	744 038 543	369 285 079	25.45	12.63
1937	3 080 215 178	796 541 559	377 247 512	25.86	12.25
1936	2 919 219 824	749 450 897	354 004 065	25.67	12.13
1935	2 710 574 105	717 492 334	340 848 348	26.47	12.57
1934	2 648 136 019	671 758 390	317 085 754	25.37	11.97
1933	2 566 306 365	629 944 862	303 202 286	24.55	11.81
1932	2 799 941 979	706 932 389	340 861 474	25.25	12.17
1931	3 317 937 177	917 088 041	434 122 087	27.64	13.08
1930	3 726 888 177	1 078 652 206	493 129 386	28.94	13.23
1929	3 906 232 674	1 170 509 864	520 793 967	29.97	13.33
1928	3 849 185 627	1 167 823 870	528 056 716	30.34	13.72
1927	3 881 058 706	1 205 133 234	545 543 942	31.05	14.06
1926	3 885 700 975	1 207 148 205	546 508 002	31.07	14.06
1925	3 795 046 896	1 189 739 221	547 769 127	31.35	14.43
1924	3 696 048 994	1 188 675 319	555 885 343	32.16	15.04
1923	3 634 920 429	1 222 826 322	569 666 172	33.64	15.67
1922	3 465 765 684	1 184 875 220	574 210 592	34.19	16.57
Total				Average	
1936-1939	11 899 574 624	3 054 692 372	1 465 343 997	25.67	12.31
Total				Average	
1922-1925	14 591 782 003	4 786 116 082	2 247 531 234	32.80	15.40
Percent of improvement 4 years 1936-1939 compared with 4 years 1922-1925				21.74	20.06

SOURCE: Annual issues of "Statistics of Railways in the United States," published by the Interstate Commerce Commission, as follows:
1. Passenger-train car-miles from Table 55 (old 31), page S-49, year 1938, and corresponding tables for prior years.
2. Passenger operating expenses and passenger transportation expenses from Table 86 (old 36), page S-79, year 1938, and corresponding

PASSENGER OPERATING AND PASSENGER TRANSPORTATION EXPENSES

Calendar years 1922 to 1939, inclusive

Year (a)	Passenger- train car-miles (b)	Passenger operating expenses (c)	Passenger transportation expenses (d)	Averages per passenger- train car-mile	
				Passenger operating expenses (cents) (e)	Passenger transportation expenses (cents) (f)
1939	2 976 512 696	\$764 661 373	\$364 807 341	25.69	12.26
1938	2 923 626 926	744 038 543	369 285 079	25.45	12.63
1937	3 080 215 178	796 541 559	377 247 512	25.86	12.25
1936	2 919 219 824	749 450 897	354 004 065	25.67	12.13
1935	2 710 574 105	717 492 334	340 848 348	26.47	12.57
1934	2 648 136 019	671 758 390	317 085 754	25.37	11.97
1933	2 566 306 365	629 944 862	303 202 286	24.55	11.81
1932	2 799 941 979	706 932 389	340 861 474	25.25	12.17
1931	3 317 937 177	917 088 041	434 122 087	27.64	13.08
1930	3 726 888 177	1 078 652 206	493 129 386	28.94	13.23
1929	3 906 232 674	1 170 509 864	520 793 967	29.97	13.33
1928	3 849 185 627	1 167 823 870	528 056 716	30.34	13.72
1927	3 881 058 706	1 205 133 234	545 543 942	31.05	14.06
1926	3 885 700 975	1 207 148 205	546 508 002	31.07	14.06
1925	3 795 046 896	1 189 739 221	547 769 127	31.35	14.43
1924	3 696 048 994	1 188 675 319	555 885 343	32.16	15.04
1923	3 634 920 429	1 222 826 322	569 666 172	33.64	15.67
1922	3 465 765 684	1 184 875 220	574 210 592	34.19	16.57
Total				Average	
1936-1939	11 899 574 624	3 054 692 372	1 465 343 997	25.67	12.31
Total				Average	
1922-1925	14 591 782 003	4 786 116 082	2 247 531 234	32.80	15.40
Percent of improvement 4 years 1936-1939 compared with 4 years 1922-1925				21.74	20.06

S. JRCE: Annual issues of "Statistics of Railways in the United States," published by the Interstate Commerce Commission, as follows:

1. Passenger-train car-miles from Table 55 (old 31), page S-49, year 1938, and corresponding tables for prior years.
2. Passenger operating expenses and passenger transportation expenses from Table 86 (old 36), page S-79, year 1938, and corresponding tables for prior years.
3. Data for 1939 compiled by and on file in Bureau of Statistics, Interstate Commerce Commission.
4. Averages per passenger-train car-mile computed from basic data shown in adjoining columns.

Defendant's Exhibit No. 22 (Witness J.H. Parmelee)
Nov. 26, 1940

RAILWAYS OF CLASS I IN THE UNITED STATES

FREIGHT SERVICE OPERATING AVERAGES
Calendar years 1922, 1924, 1926, 1928, 1930, 1932, 1934, 1936, 1938 and 1939

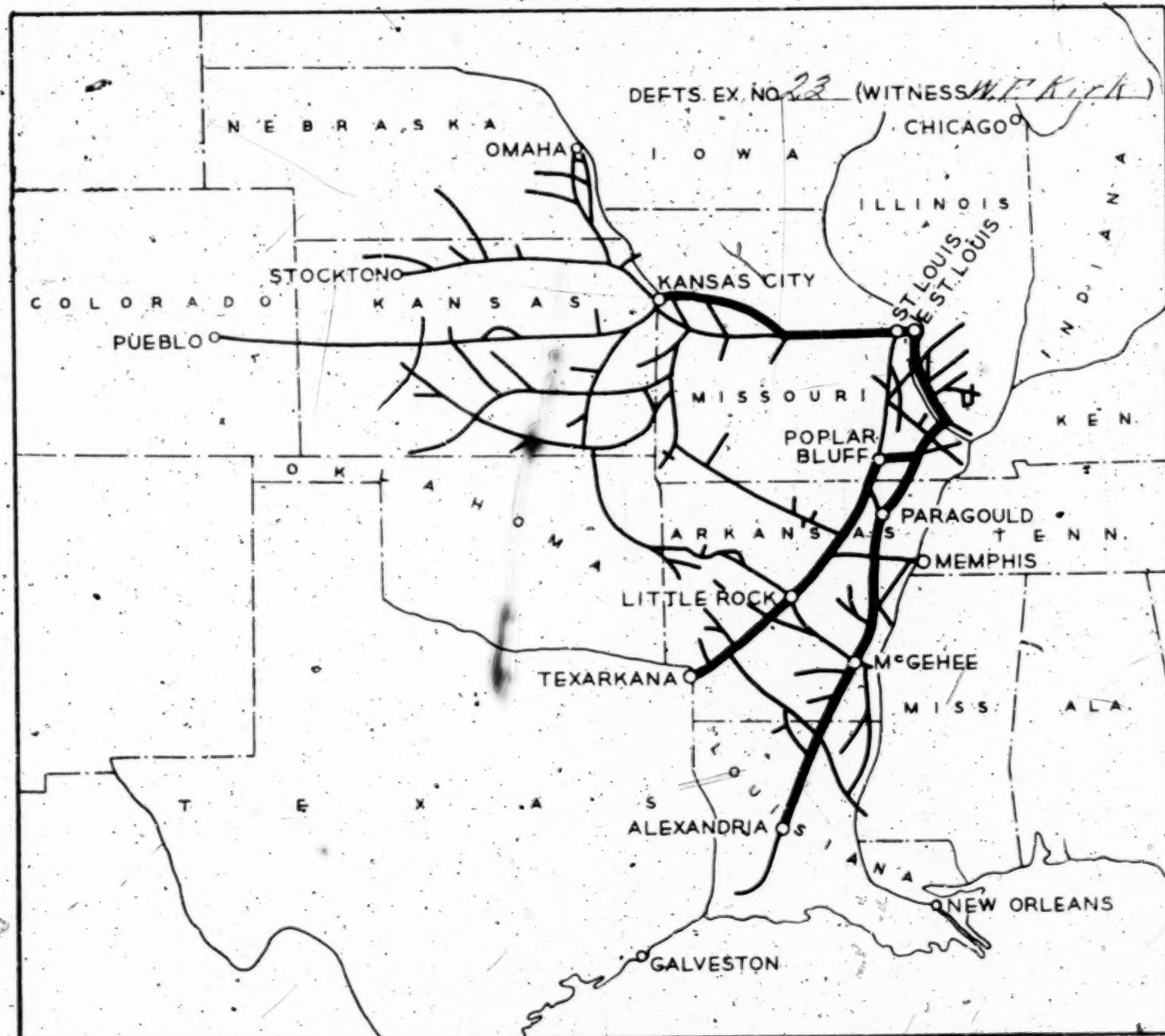
ITEM (b)	1922 (c)	1924 (d)	1926 (e)	1928 (f)	1930 (g)	1932 (h)	1934 (i)	1936 (j)	1938 (k)	1939 (l)	PERCENT INCREASE 1939 OVER 1922 (m)
Miles of line operated in freight service ...	234 517	234 592	235 594	239 006	240 195	240 208	237 146	234 687	232 967	232 026	d 1.1
Freight train-miles	555 789 000	600 682 000	632 927 000	602 433 000	538 169 000	390 839 000	421 384 000	486 255 000	422 676 000	452 277 000	d 18.6
Freight cars per freight train	38.4	41.7	45.2	48.1	48.9	44.8	46.2	46.4	47.7	49.1	27.9
Net tons per freight train	676	715	772	792	784	663	706	774	759	813	20.3
Average tractive power per locomotive(pounds)	37 441	39 891	41 886	43 838	45 225	46 299	47 712	48 972	49 803	50 395	34.6
Average capacity per freight-carrying car (tons)	43.1	44.3	45.1	45.8	46.6	47.0	48.0	48.8	49.4	49.7	15.3
Freight train speed (m.p.h.)	11.1	11.5	11.9	12.9	13.8	15.5	15.9	15.8	16.6	16.7	50.5
Gross ton-miles per freight train-hour	16 188	18 257	20 692	23 600	25 877	26 042	28 040	29 200	31 141	32 808	102.7
Net ton-miles per freight train-hour	7 479	8 222	9 201	10 183	10 836	10 265	11 225	12 146	12 473	13 449	79.8
Gross ton-miles (exclusive of locomotives and tenders) per ton of fuel	10 750	11 775	12 915	13 943	14 528	14 086	14 297	14 592	15 207	15 528	44.4

d - Decrease

SOURCE: Items 1, 2, 3, 4, 7, 8, 9 and 10, from Interstate Commerce Commission's summary of "Freight Train Performance of Class I Steam Railways in the United States," Statement No. M-211 (OS-A), December, 1939, and prior issues; summary of "Fuel and Power for Locomotives and Rail Motor Cars of Class I Steam Railways in the United States," Statement No. M-230 (OS-E), December, 1939, and prior issues.

Items 5 and 6, from Interstate Commerce Commission's "Statistics of Railways in the United States," Table 18 (old 8), page S-16, and Table 27 (old 9), page S-22, for year 1938, and corresponding tables for prior years; figures for 1939 compiled by and on file in Bureau of Statistics, Interstate Commerce Commission.

Defendant s Exhibit No. 23 (Witness W.F. Kirk)
Nov. 26, 1940



MISSOURI PACIFIC RAILROAD CO.

— HEAVY LINE INDICATES TERRITORY
COVERED BY TYPICAL FREIGHT TRAIN EXHIBIT.

MISSOURI PACIFIC RAILROAD COMPANY

FREIGHT OPERATING AND FREIGHT TRANSPORTATION EXPENSES RELATED TO TRAFFIC

Calendar Years 1922 to 1939, Inclusive

Year (a)	Revenue ton-miles (b)	Freight operating expenses (c)	Freight transportation expenses (d)	Averages per 1,000 revenue ton-miles	
				Freight operating expenses (e)	Freight transportation expenses (f)
1939	7,671,841,720	\$51,042,259	\$23,739,113	\$6.65	\$3.09
1938	7,457,231,356	49,577,354	23,589,584	6.65	3.16
1937	9,029,169,796	55,710,460	26,736,377	6.17	2.96
1936	8,492,874,166	53,724,006	25,347,853	6.33	2.98
1935	6,737,978,069	45,753,873	21,709,358	6.79	3.22
1934	6,761,819,795	44,683,953	20,621,995	6.61	3.05
1933	6,070,963,102	39,773,213	18,966,796	6.55	3.12
1932	5,855,608,791	40,503,373	20,595,141	6.92	3.52
1931	8,212,029,322	53,748,916	27,262,818	6.55	3.32
1930	10,363,948,532	68,130,796	33,382,257	6.57	3.22
1929	11,051,806,038	79,142,337	37,242,365	7.16	3.37
1928	10,312,288,840	75,856,299	35,264,595	7.36	3.42
1927	9,386,122,064	75,602,620	35,792,025	8.05	3.81
1926	10,132,034,120	78,421,454	36,936,516	7.74	3.65
1925	9,564,442,764	78,751,567	37,743,462	8.23	3.95
1924	8,773,081,103	74,149,942	36,157,790	8.45	4.12
1923	7,416,475,588	72,816,835	34,020,808	9.82	4.59
1922	5,995,683,688	62,772,131	30,093,150	10.47	5.02
Total 1936-1939	32,651,117,038	210,054,079	99,412,927	6.43	3.04
Total 1922-1925	31,749,683,143	288,490,475	138,015,210	9.09	4.35
Percent of improvement 4 years 1936-1939 compared with 4 years 1922-1925				29.3	30.1

SOURCE: Revenue ton-miles - Annual reports to Interstate Commerce Commission.
Freight operating and transportation expenses - Annual reports to
Interstate Commerce Commission.

Defendant's Exhibit No. 25 (Witness W. F. Kirk).
Nov. 27, 1940

MISSOURI PACIFIC RAILROAD COMPANY

FREIGHT SERVICE OPERATING AVERAGES

Calendar Years 1922, 1924, 1926, 1928, 1930, 1932, 1934, 1936, 1938 and 1939

Item (b)	1922 (c)	1924 (d)	1926 (e)	1928 (f)	1930 (g)	1932 (h)	1934 (i)	1936 (j)	1938 (k)	1939 (l)	Per Cent. of Increase 1939 over 1922 (m)
Miles of line operated in freight service ..	7 224.37	7 300.20	7 309.67	7 416.99	7 423.43	7 406.61	7 321.33	7 192.14	7 146.00	7 146.00	Dec. 1.08
Freight train miles	12 051 416	15 599 959	16 707 916	16 651 364	16 655 025	12 666 580	13 357 272	14 928 958	12 738 176	12 885 134	6.92
Freight cars per freight train	35.2	39.6	44.8	46.3	47.9	41.9	45.0	44.7	46.0	46.6	32.4
Net tons per freight train	616	667	717	729	824	557	611	673	696	711	15.4
Average tractive power per locomotive (lbs.)	33 083	37 542	39 510	42 519	42 926	43 280	44 435	46 505	46 530	46 787	41.4
Average capacity per freight carrying car (Tons)	37.2	40.2	40.0	40.7	42.7	42.5	46.0	46.8	47.8	47.4	27.4
Freight train speed (m.p.h.)	11.7	11.3	12.6	13.7	14.8	17.2	17.9	17.5	17.9	18.0	53.9
Gross ton miles per freight train hour	15 597	16 714	20 934	23 803	26 722	26 403	29 944	30 790	32 611	33 356	113.9
Net ton miles per freight train hour	7 185	7 507	9 029	10 002	10 713	9 583	10 924	11 730	12 412	12 726	77.1
Gross ton miles (Exclusive of locomotives and tenders) per ton of fuel	11 329	12 714	14 123	14 640	15 198	14 004	14 731	14 268	15 008	15 229	34.4

SOURCE: Items 1-4, 7 and 8 - Reports of Freight Train Performance, Form OS-A, filed with Interstate Commerce Commission.

Item 5 - Total tractive effort - total steam locomotives available for service at close of each year as reported in Schedule 417 of Annual Report to the Interstate Commerce Commission.

Item 6 - Aggregate capacity of all freight carrying cars - total number of such cars available for service at close of year, as reported in Schedule 417 of Annual Report to the Interstate Commerce Commission.

Item 9 - Net ton miles - train hours as reported on Form OS-A to Interstate Commerce Commission.

Item 10 - Gross ton miles (cars, contents and cabooses) - equated net tons of fuel consumed as reported in years 1922, 1930, 1932 and 1934 on Form OS-A to Interstate Commerce Commission and as reported in years 1936, 1938, and 1939 in Schedule 531 and 571 respectively, of Annual Report to Interstate Commerce Commission.

Defendant's Exhibit No. 26 (Witness W.F. Kirk)
Nov. 27, 1940

EXPLANATION OF SYMBOLS USED BELOW
UNDER HEADING "AVERAGE CONSIST"

- A - Perishable loads
B - Other loads
C - Empty cars and includes cabooses
D - Total all cars

MISSOURI PACIFIC RAILROAD COMPANY

TYPICAL EXAMPLES OF FREIGHT TRAINS HANDLED
BETWEEN CERTAIN TERMINALS, APRIL 1ST - 10TH INCLUSIVE 1939

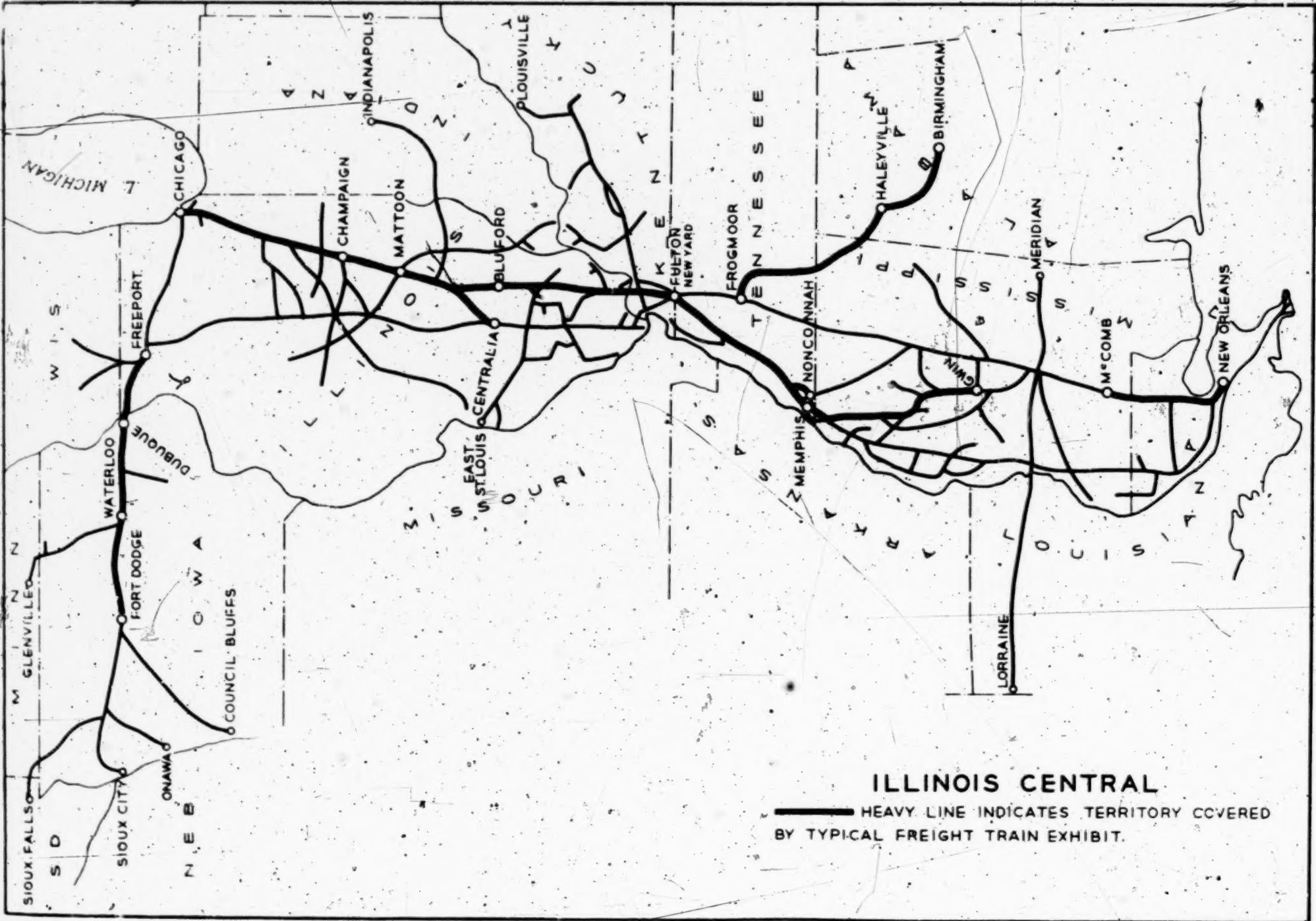
NAME OF RAILROAD	FROM	TO	DIS- TANCE (Miles)	TEN DAY PERIOD STUDIED (Mo. & Yr.)	HULING GRADE	70 CARS OR LESS						71 CARS TO 100 CARS						NO. OF TRAINS								
						NO. OF TRAINS	TYPE OF LOCOMOTIVE	AVERAGE CONSIST					NO. OF TRAINS	TYPE OF LOCOMOTIVE	AVERAGE CONSIST											
								A	B	C	D	TONS			A	B	C		D	TONS						
Missouri Pacific	St. Louis, Mo.	Kansas City, Mo.	284	April 1939	1.00	10	Berkshire	2	54	7	63	2,251	15	Berkshire	3	60	17	80	3,287	12						
	Kansas City, Mo.	St. Louis, Mo.	284	April 1939	1.00	8	Berkshire	8	42	14	64	2,669	15	Berkshire	17	42	27	86	3,703	17						
	Duqu, Ill.	Paragould, Ark.	228	April 1939	.50	8	Mikado	0	44	15	59	2,248	2	Mikado	0	50	21	71	2,823	10						
	Paragould, Ark.	Duqu, Ill.	228	April 1939	.50	1	Mikado	13	45	7	65	3,035	17	Mikado	49	27	10	86	4,002	2						
	Paragould, Ark.	McGehee, Ark.	188	April 1939	1.10	-	-	-	-	-	-	-	10	Mikado	0	60	28	88	3,448	7						
	McGehee, Ark.	Paragould, Ark.	188	April 1939	.35	-	-	-	-	-	-	-	17	Mikado	49	33	10	92	4,359	1						
	McGehee, Ark.	Alexandria, La.	191	April 1939	.64	8	Mikado	0	61	6	66	2,933	10	Mikado	0	41	45	86	3,064	12						
	Alexandria, La.	McGehee, Ark.	191	April 1939	.58	9	Mikado	0	56	7	63	3,040	10	Mikado	30	44	17	91	4,302	10						
	Duqu, Ill.	Peplar Bluff, Mo.	191	April 1939	.88	4	Mikado	0	34	32	66	2,627	23	Mikado	0	40	41	81	2,805	3						
	Peplar Bluff, Mo.	Duqu, Ill.	191	April 1939	.30	6	Mikado	14	33	12	59	2,567	9	Mikado	8	46	35	89	3,685	15						
	Peplar Bluff, Mo.	Little Rock, Ark.	179	April 1939	.45	15	Mikado	0	42	21	63	2,332	19	Mikado	0	48	38	86	3,116	3						
	Little Rock, Ark.	Peplar Bluff, Mo.	179	April 1939	.35	14	Mikado	6	40	12	58	2,264	11	Mikado	8	56	20	84	3,422	10						
	Little Rock, Ark.	Texarkana, Ark.	146	April 1939	1.11	13	Mikado	0	49	13	62	2,292	25	Mikado	0	30	50	80	2,480	-						
	Texarkana, Ark.	Little Rock, Ark.	146	April 1939	.80	21	Mikado	13	36	10	58	2,481	14	Mikado	14	36	33	83	2,947	2						
TOTAL TRAINS						418	117						Trains 70 cars or less						197	Trains 71 cars to 100 cars.						104
PER CENT OF ALL TRAINS						100	28						47.1						24.9							
AVERAGE CARS PER TRAIN						86	61						85						116							

COMPANY

 INS HANDLED
 10TH INCLUSIVE 1939

71 CARS TO 100 CARS								101 CARS AND OVER								MAXIMUM CARS PER TRAIN
NO. OF S TRAINS	TYPE OF LOCOMOTIVE	AVERAGE CONSIST					NO. OF TRAINS	TYPE OF LOCOMOTIVE	AVERAGE CONSIST							
		A	B	C	D	TONS			A	B	C	D	TONS			
1	15	Berkshire	3	60	17	80	3,287	12	Berkshire	3	48	67	118	3,961	126	
9	15	Berkshire	17	42	27	86	3,703	17	Berkshire	20	42	46	108	4,005	124	
8	2	Mikado	0	50	21	71	2,823	10	Mikado	0	17	104	121	3,749	125	
5	17	Mikado	49	27	10	86	4,002	2	Mikado	0	67	39	106	6,178	110	
	10	Mikado	0	60	28	88	3,448	7	Mikado	0	11	113	124	3,598	124	
	17	Mikado	49	33	10	92	4,359	1	Mikado	21	62	19	102	4,319	102	
3	10	Mikado	0	41	45	86	3,064	12	Mikado	0	31	85	116	3,685	119	
0	10	Mikado	30	44	17	91	4,302	10	Mikado	44	30	36	110	4,557	126	
7	23	Mikado	0	40	41	81	2,805	3	Mikado	0	2	125	125	3,379	125	
7	9	Mikado	8	45	35	89	3,685	15	Mikado	5	60	52	117	4,731	127	
2	19	Mikado	0	48	38	86	3,116	3	Mikado	0	10	106	116	4,128	125	
4	11	Mikado	8	56	20	84	3,422	10	Mikado	0	69	49	118	4,571	125	
2	25	Mikado	0	30	50	80	2,480	-	-	-	-	-	-	-	95	
31	14	Mikado	14	36	33	83	2,947	2	Mikado	0	69	56	125	4,621	126	
197								104								
Trains 71 cars to 100 cars.								Trains 101 cars and over								
47.1								24.9								
85								116								

Defendant's Exhibit No. 27 (Witness C.R. Young)
Nov. 27, 1940



ILLINOIS CENTRAL
HEAVY LINE INDICATES TERRITORY COVERED
BY TYPICAL FREIGHT TRAIN EXHIBIT.

Defendant's Exhibit No. 28 (Witness C.R. Young)

Dec. 11, 1940

ILLINOIS CENTRAL SYSTEM
(INCLUDING THE YAZOO AND MISSISSIPPI VALLEY RAILROAD COMPANY)
FREIGHT OPERATING AND FREIGHT TRANSPORTATION EXPENSES
RELATED TO TRAFFIC
CALENDAR YEARS 1922 TO 1939, INCLUSIVE

YEAR	REVENUE TON MILES	FREIGHT OPERATING EXPENSES	FREIGHT TRANSPORTATION EXPENSES	AVERAGE PER 1000 REVENUE TON MILES	
				FREIGHT OPERATING EXPENSES	FREIGHT TRANSP. EXPENSES
(a)	(b)	(c)	(d)	(e)	(f)
1939	10,245,927,314	\$ 63,019,224	\$32,271,076	\$ 6.15	\$ 3.15
1938	9,412,956,488	58,178,545	31,065,729	6.18	3.30
1937	10,921,959,567	65,270,407	34,229,555	5.98	3.13
1936	10,628,958,308	63,963,170	31,950,478	6.02	3.01
1935	9,108,478,713	60,992,601	28,187,299	6.70	3.09
1934	8,323,717,830	50,446,461	25,953,702	6.06	3.12
1933	7,711,204,376	45,928,942	23,544,928	5.96	3.05
1932	7,981,707,973	49,089,721	25,245,785	6.15	3.16
1931	9,752,447,820	69,854,167	34,480,376	7.16	3.54
1930	12,568,231,120	84,629,043	41,657,036	6.73	3.31
1929	15,467,369,973	105,590,773	49,084,217	6.83	3.17
1928	15,494,819,712	102,883,420	48,318,892	6.64	3.12
1927	16,121,240,173	107,105,893	49,629,463	6.64	3.08
1926	15,779,569,491	106,089,273	48,797,913	6.72	3.09
1925	14,891,944,844	99,646,954	46,779,571	6.69	3.14
1924	14,284,712,470	99,387,562	47,139,760	6.96	3.30
1923	16,151,798,440	115,136,234	54,100,398	7.13	3.35
1922	15,085,299,196	103,656,063	48,694,895	6.87	3.23
TOTAL 1936- 1939	41,209,801,677	250,431,346	129,516,838	6.08	3.14
TOTAL 1922- 1925	60,413,754,950	417,826,813	196,714,624	6.92	3.28
PER CENT OF IMPROVEMENT 4 YEARS 1936 - 1939 COMPARED WITH 4 YEARS 1922 - 1925				12.1	3.7

Defendant's Exhibit No. 29 (Witness C. R. Young)
Dec. 11 1940

ILLINOIS CENTRAL SYSTEM

(INCLUDING THE TAZOO AND MISSISSIPPI VALLEY RAILROAD COMPANY)

FREIGHT SERVICE OPERATING AVERAGES

Calendar Years 1922, 1924, 1926, 1928, 1930, 1932, 1934, 1936, 1938 and 1939

Item	1922	1924	1926	1928	1930	1932	1934	1936	1938	1939	Per Cent Increase 1939 over 1922
Miles of line operated in freight service	6135.86	6199.94	6555.10	6680.37	6692.99	6661.41	6608.44	6565.04	6540.00	6537.00	6.5
Freight train miles	22061007	21205151	23714774	23301474	20294076	14754491	16317685	19237099	15149807	15270787	Dec. 30.5
Freight cars per freight train	42.7	44.7	44.4	45.0	44.6	40.0	39.1	38.0	43.9	46.1	8.0
Tons per freight train	761	747	754	739	698	605	584	636	707	761	-
Average tractive power per locomotive (lbs.)	37 390	39 168	41 363	43 730	44 834	44 875	44 789	48 131	49 672	51 079	36.6
Average capacity per freight carrying car (tons)	43.3	42.8	43.5	44.0	44.4	44.5	44.4	45.1	45.2	45.1	6.6
Freight train speed (m. p. h.)	11.3	11.8	12.8	13.6	14.4	16.0	15.9	16.7	16.2	16.3	44.2
Gross ton-miles per freight train-hour	18 812	20 319	22 239	24 009	24 963	24 411	25 070	25 453	28 162	29 934	59.1
Net ton-miles per freight train-hour	8 611	8 813	9 626	10 654	10 029	9 662	9 883	10 511	11 382	12 297	42.8
Gross ton-miles (exclusive of locomotives and tenders) per ton of fuel	12 216	12 848	13 411	13 637	13 495	12 794	12 634	13 038	13 527	13 512	10.6

Items 1, 2, 3, 4, 7 and 8 - Reports of Freight Train Performance, Form OS-1, filed with Interstate Commerce Commission.

Item 5 - Total tractive effort + total steam locomotives available for service at close of each year as reported in Schedule 417 of Annual Report to the Interstate Commerce Commission.

Item 6 - Aggregate capacity of all freight carrying cars + total number of such cars available for service at close of year, as reported in Schedule 417 of Annual Report to the Interstate Commerce Commission.

Item 9 - Net ton miles + train hours as reported on Form OS-1 to Interstate Commerce Commission.

Item 10 - Gross ton miles (cars, contents and cabooses) + equated net tons of fuel consumed as reported to Interstate Commerce Commission in years 1922 to 1934, inclusive, on Form OS-1 and as reported in years 1936, 1938 and 1939 on Forms OS-1 and OS-2 respectively.

Defendant's Exhibit No. 30 (Witness C.R. Young)
~~xxx~~ Nov. 28, 1940

LOCATION OF SYMBOLS USED BELOW
IN HEADING "AVERAGE CONSIST"

Perishable
Other Loads
Empty Cars - Including Outbound
Total Cars

ILLINOIS CENTRAL SYSTEM

TYPICAL EXAMPLES OF THROUGH FREIGHT TRAINS HANDLED
BETWEEN CERTAIN TERMINALS. APRIL 10th - 19th INCLUSIVE, 1939

FROM	TO	DISTANCE (MILES)	RULING GRADE	70 CARS OR LESS						71 CARS TO 100 CARS						101 TO 125 CARS						126 CARS AND OVER						MAXIMUM CARS PER TRAIN											
				NO. OF TRAINS	TYPE OF LOCOMOTIVE	AVERAGE CONSIST					NO. OF TRAINS	TYPE OF LOCOMOTIVE	AVERAGE CONSIST					NO. OF TRAINS	TYPE OF LOCOMOTIVE	AVERAGE CONSIST					NO. OF TRAINS	TYPE OF LOCOMOTIVE	AVERAGE CONSIST												
						A	B	C	D	TOTAL			A	B	C	D	TOTAL			A	B	C	D	TOTAL			A	B	C	D	TOTAL			A	B	C	D	TOTAL	
ago, Ill.	Champaign, Ill.	128	.55	12	Mikado	0	30	24	54	2,300	5	Mikado	0	11	80	91	3,572																						100
ago, Ill.	Champaign, Ill.	128	.55	39	Mountain	0	42	11	53	2,570	6	Mountain	0	17	70	87	4,300																					140	
paign, Ill.	Chicago, Ill.	128	.55	7	Mikado	18	28	8	54	3,863	5	Mikado	1	67	9	77	5,018																					91	
paign, Ill.	Chicago, Ill.	128	.55	17	Mountain	24	27	5	54	3,330	35	Mountain	3	70	9	82	6,105																					109	
Bluffs, Ill.	Bluffs, Ill.	127	.50	5	Mikado	0	36	9	45	2,032	4	Mikado	0	12	83	95	3,907																				113		
paign, Ill.	Bluffs, Ill.	127	.50	24	Mountain	0	44	6	50	2,714	9	Mountain	0	52	32	84	4,036																				140		
ago, Ill.	Champaign, Ill.	127	.30	4	Mikado	25	14	15	54	2,965																											86		
ago, Ill.	Champaign, Ill.	127	.30	13	Mountain	30	19	9	58	3,210	25	Mountain	7	64	14	85	5,624																				105		
ago, Ill.	Mattoon, Ill.	82	.30	3	Mikado	0	47	11	58	3,393	2	Mikado	3	39	38	80	3,864																				88		
ago, Ill.	Mattoon, Ill.	82	.30	5	Mountain	4	34	7	45	3,481	3	Mountain	2	65	16	83	5,155																				97		
ago, Ill.	Bluffs, Ill.	82	.50								2	Mikado	0	12	80	92	3,830																				114		
ago, Ill.	Bluffs, Ill.	82	.50								1	Mountain	0	2	96	98	3,678																				137		
paign, Ill.	Centralia, Ill.	124	.50	5	Mikado	0	8	33	41	1,889	7	Mikado	0	21	73	94	3,927																				101		
paign, Ill.	Centralia, Ill.	124	.50	6	Mountain	0	18	42	60	2,809	5	Mountain	0	10	73	83	3,409																				137		
paign, Ill.	Champaign, Ill.	124	.30	5	Mikado	0	61	7	68	3,430	7	Mikado	0	67	11	78	5,061																				105		
paign, Ill.	Champaign, Ill.	124	.30								16	Mountain	0	77	8	85	7,043																					93	
ago, Ill.	New York, Ky.	127	.30	14	Lima	0	33	12	45	2,444	19	Lima	0	19	73	92	4,294																				104		
ago, Ill.	New York, Ky.	127	.30	2	Mountain	0	45	5	50	3,027	6	Mountain	0	46	49	95	4,937																				100		
ago, Ill.	New York, Ky.	127	.30	5	Mikado	0	43	16	59	2,974																											86		
ago, Ky.	Bluffs, Ill.	127	.30	17	Lima	24	19	18	39	3,281	15	Lima	22	35	22	79	4,388																				98		
ago, Ky.	Bluffs, Ill.	127	.30	8	Mountain	13	47	5	65	3,587	5	Mountain	7	64	8	79	4,699																				85		
ago, Ky.	Bluffs, Ill.	127	.30	5	Mikado	13	54	1	63	3,589	1	Mikado	0	62	11	73	4,049																				73		
ago, Ky.	Monroeville, Tenn.	125	.49	10	Mikado	0	32	7	39	1,774																											63		
ago, Ky.	Monroeville, Tenn.	125	.49	2	Mountain	0	50	11	61	3,578	5	Mountain	0	30	39	89	3,798																				124		
ago, Ky.	Monroeville, Tenn.	125	.49	16	Lima	0	46	13	59	3,544	15	Lima	0	42	40	82	4,173																				123		
ago, Tenn.	New York, Ky.	125	.51	15	Mikado	0	38	19	57	3,623	4	Mikado	0	35	39	74	3,024																				80		
ago, Tenn.	New York, Ky.	125	.51	7	Mountain	0	60	3	63	3,228	2	Mountain	0	73	5	78	4,281																				81		
ago, Tenn.	New York, Ky.	125	.51	31	Lima	19	23	15	57	2,677	6	Lima	0	38	42	80	3,508																				109		
ago, Tenn.	Waleysville, Ala.	134	.50	7	Central	0	33	19	52	2,340																											66		
ago, Tenn.	Waleysville, Ala.	134	.50	14	Mikado	0	29	14	43	1,841	1	Mikado	0	16	59	75	3,177																				75		
ago, Ala.	Frogmoor, Tenn.	134	.50	4	Central	0	27	17	44	2,270	2	Central	0	22	66	88	4,463																				93		
ago, Ala.	Frogmoor, Tenn.	134	.50	15	Mikado	0	33	14	47	2,517																											63		
ago, Ala.	Birmingham, Ala.	83	1.25	27	Central	0	21	16	37	1,544																											61		
ago, Ala.	Waleysville, Ala.	83	1.81	27	Central	0	25	14	39	1,786																											54		
ago, Tenn.	Win, Miss.	148	.50	10	Mikado	0	48	18	64	3,578	24	Mikado	0	64	39	83	4,490																				98		
ago, Miss.	Memphis, Tenn.	148	1.58	12	Mikado	17	33	13	63	3,741	19	Mikado	16	45	13	76	4,419																				96		
ago, Miss.	New Orleans, La.	105	1.40	15	Mikado	0	22	34	56	3,703	26	Mikado	0	34	56	90	5,241																				108		
ago, La.	McComb, Miss.	105	.45	30	Mikado	20	27	5	6	2,089	9	Mikado	8	43	26	77	3,773																				108		
ago, Ill.	Waterloo, Iowa	109	.99	42	Mountain	2	21	26	49	2,099	2	Mountain	0	4	75	77	2,671																				78		
ago, Ill.	Waterloo, Iowa	109	.99	11	Mikado	2	19	27	48	2,346	1	Mikado	0	20	53	73	2,990																				75		
ago, Ill.	Waterloo, Iowa	109	.99	5	Hudson	0	31	25	56	2,681																											80		
ago, Iowa	Freeport, Ill.	109	1.40	62	Mountain	23	11	11	45	2,220	1	Mountain	0	8	59	77	2,670																				77		
ago, Iowa	Freeport, Ill.	109	1.40	11	Mikado	2	29	19	80	2,252																											69		
ago, Iowa	Freeport, Ill.	109	1.40	4	Hudson	30	14	4	48	2,459																											80		
ago, Iowa	Fort Dodge, Iowa	100	.30	37	Mikado	1	16	32	49	1,652	8	Mikado	1	15	64	80	2,460																				90		
ago, Iowa	Waterloo, Iowa	100	1.00	42	Mikado	21	19	12	62	2,529	2	Mikado	0	11	76	87	3,085																				87		
ago, Iowa	Dubuque, Iowa	93	1.40	4	Mountain	4	26	12	42	2,061																											85		
ago, Iowa	Dubuque, Iowa	93	1.40								1	Mikado	0	11	64	75	2,540																				75		
ago, Iowa	Waterloo, Iowa	93	.99	2	Mountain	0	20	10	30	1,864																											34		
ago, Iowa	Waterloo, Iowa	93	.99	3	Mikado	0	20	25	45	2,144																											60		
ago, Iowa	Freeport, Ill.	66	.87	5	Mountain	3	23	15	41	1,972																											55		
ago, Ill.	Dubuque, Iowa	66	.74	4	Mountain	12	6	19	37	1,718	1	Mountain	0	9	70	79	2,330																				79		
Total trains		1,025		650	Trains 70 cars or less					309	Trains 71 cars to 100 cars					46	Trains 101 cars to 125 cars					20	Trains 126 cars and over																
Percent of all trains		100%		63.41%						30.15%						4.49%						1.95%																	
Average cars per train		65		51						64						111						134																	

Defendant's Exhibit No. 31 (Witness C.R. Young)
Nov. 28, 1940

ILLINOIS CENTRAL SYSTEM

MAXIMUM NUMBER OF CARS HANDLED
IN VARIOUS MAIN LINE PASSENGER TRAINS

APRIL 10TH TO 19TH, INCLUSIVE, 1939

LINE NO.	TRAIN NO.	NAME	ROUTE	MILES	NUMBER OF CARS											TOTAL
					7	8	9	10	11	12	13	14	15	16	17 & OVER	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)
1	1	Greole	<u>SOUTH</u> Chicago-New Orleans	912	-	-	-	-	-	-	-	1	2	3	4	10
2	3	Louisiana	Chicago-New Orleans	912	-	-	-	-	-	1	1	1	6	2	-	10
3	5	Panama Limited	Chicago-New Orleans	912	1	2	4	-	1	1	1	-	-	-	-	10
4	2	Greole	<u>NORTH</u> New Orleans-Chicago	912	-	-	-	-	-	-	-	-	2	6	2	10
5	4	Louisiana	New Orleans-Chicago	912	-	-	-	-	-	-	1	4	5	-	-	10
6	6	Panama Limited	New Orleans-Chicago	912	1	2	4	1	1	1	-	-	-	-	-	10
7		TOTAL			2	4	8	1	2	3	2	6	15	11	6	60
8		PER CENT OF TOTAL			3.3	6.8	13.3	1.6	3.3	5.0	3.3	10.0	25.0	18.4	10.0	
TOTAL TRAINS OVER 14 CARS					32 or 53.4%											
TOTAL TRAINS 14 CARS OR UNDER					28 or 46.6%											
TOTAL TRAINS					60 or 100.0%											
9	9	Seminole	<u>SOUTH</u> Chicago-Birmingham	690	-	-	-	-	3	5	1	1	-	-	-	10
10	10	Seminole	<u>NORTH</u> Birmingham-Chicago	690	-	-	-	-	-	1	2	5	2	-	-	10
11		TOTAL			-	-	-	-	3	6	3	6	2	-	-	20
12		PER CENT OF TOTAL			-	-	-	-	15.0	30.0	15.0	30.0	10.0	-	-	
TOTAL TRAINS OVER 14 CARS					2 or 10.0%											
TOTAL TRAINS 14 CARS OR UNDER					18 or 90.0%											
TOTAL TRAINS					20 or 100.0%											
13	15	Chickasaw	<u>SOUTH</u> St. Louis-Memphis	316	-	-	-	1	2	1	4	2	-	-	-	10
14	16	Chickasaw	<u>NORTH</u> Memphis-St. Louis	316	-	1	5	2	1	1	-	-	-	-	-	10
15		TOTAL			-	1	5	3	3	2	4	2	-	-	-	20
16		PER CENT OF TOTAL			-	5.0	25.0	15.0	15.0	10.0	20.0	10.0	-	-	-	
TOTAL TRAINS OVER 14 CARS					None											
TOTAL TRAINS 14 CARS OR UNDER					20 or 100.0%											
TOTAL TRAINS					20 or 100.0%											
17	11	Hardy	<u>WEST</u> Chicago-Omaha	516	-	1	7	2	-	-	-	-	-	-	-	10
18	12	Hardy	<u>EAST</u> Omaha-Chicago	516	-	1	9	-	-	-	-	-	-	-	-	10
19		TOTAL			-	2	16	2	4	-	-	-	-	-	-	20
20		PER CENT OF TOTAL			-	10.0	80.0	10.0	-	-	-	-	-	-	-	
TOTAL TRAINS OVER 14 CARS					None											
TOTAL TRAINS 14 CARS OR UNDER					20 or 100.0%											
TOTAL TRAINS					20 or 100.0%											

[fols. 5339-5340] DEFENDANTS EXHIBIT No. 32 (Witness
P. G. Otterback) Nov. 28, 1940

Total Number of Locomotives and Total Number of Freight-
Train Cars, Excluding Caboose Cars

All Railways, United States, 1890-1910

Year ended	Locomotives	Freight-train cars *
June 30, 1890	30,140	918,491
1891	32,139	947,300
1892	33,136	966,998
1893	34,788	1,013,307
1894	35,492	1,205,169
1895	35,699	1,196,119
1896	35,950	1,221,887
1897	35,986	1,221,730
1898	36,234	1,248,826
1899	36,703	1,295,510
1900	37,663	1,365,531
1901	39,584	1,464,328
1902	41,225	1,546,101
1903	43,871	1,653,782
1904	46,743	1,692,194
1905	48,357	1,731,409
1906	51,672	1,837,914
1907	55,388	1,991,557
1908	57,698	2,100,784
1909	58,219	2,086,835
1910	60,019	2,148,478

* Caboose cars excluded.

Source: Statistics of Railways in the United States, Inter-
state Commerce Commission.

[fols. 5341-5342]

DEFENDANT'S EXHIBIT. No. 33

(Witness P. G. Otterback) Nov. 28, 1940

Total Number of Locomotives and Total Number of Freight-Train Cars,
Excluding Caboose Cars

Class I Railways, United States, 1911-1939

Year ended	Locomotives		Total	Freight-train cars ^a
	Steam	Other		
June 30, 1911.....	b	b	58,071	2,117,644
1912.....	b	b	59,010	2,140,687
1913.....	b	b	61,172	2,209,533
1914.....	b	b	62,533	2,263,015
1915.....	61,883	243	62,126	2,258,855
1916.....	60,790	267	61,057	2,236,379
Dec. 31, 1916.....	61,013	319	61,332	2,253,233
1917.....	61,548	342	61,890	2,302,059
1918.....	63,546	343	63,889	2,325,673
1919.....	64,633	350	64,983	2,361,102
1920.....	64,382	364	64,746	2,322,122
1921.....	64,585	364	64,949	2,315,692
1922.....	64,140	372	64,512	2,293,392
1923.....	64,948	379	65,327	2,315,612
1924.....	65,006	352	65,358	2,348,725
1925.....	63,612	362	63,974	2,357,234
1926.....	62,342	434	62,776	2,348,679
1927.....	60,895	468	61,363	2,324,834
1928.....	58,845	625	59,470	2,297,589
1929.....	56,936	635	57,571	2,277,505
1930.....	55,875	707	56,582	2,276,877
1931.....	54,385	764	55,149	2,201,510
1932.....	52,492	824	53,316	2,144,730
1933.....	50,064	839	50,903	2,034,886
1934.....	47,436	868	48,304	1,938,362
1935.....	45,614	980	46,594	1,835,736
1936.....	44,162	984	45,146	1,758,192
1937.....	43,624	1,059	44,683	1,743,834
1938.....	42,637	1,173	43,810	1,699,689
1939.....	41,117	1,394	42,511	1,650,031

^a Caboose cars excluded.

b Not available.

Source: 1911-1938, Statistics of Railways in the United States, Interstate Commerce Commission; 1939, Preliminary Abstract of Railway Statistics, Interstate Commerce Commission.

[fol. 5343]

**Number Of Steam Locomotives For Which Tractive Power Was Reported,
Aggregate Tractive Power Reported, and Average Tractive Power Per
Steam Locomotive**

All Railways, United States, 1903-1910

Class I Railways, United States, 1911-1939

Year ended	Number of steam locos.	Agg. tract. power (lbs.)	Aver. tract. power (lbs.)	% increase over Pre. year 1903	
June 30, 1903	43,245	941,915,540	21,781		
1904	46,146	1,052,307,261	22,804	4.7	4.7
1905	47,696	1,128,771,082	23,666	3.8	8.7
1906	50,954	1,260,633,673	24,741	4.5	13.6
1907	54,563	1,409,006,658	25,781	4.2	18.4
1908	56,867	1,498,793,551	26,356	2.2	21.0
1909	57,400	1,526,888,970	26,601	0.9	22.1
1910	58,240	1,588,894,480	27,282	2.6	25.3
1911	57,409	1,624,933,414	28,305	3.7	30.0
1912	58,216	1,687,511,260	28,987	2.4	33.1
1913	60,177	1,802,662,961	29,956	3.3	37.5
1914	61,442	1,886,549,588	30,705	2.5	41.0
1915	61,882	1,970,295,300	31,840	3.7	46.2
1916	60,790	1,989,132,700	32,721	2.8	50.2
Dec. 31, 1916	60,990	2,024,118,700	33,188	1.4	52.4
1917	61,533	2,087,949,700	33,932	2.2	55.8
1918	63,531	2,223,246,296	34,995	3.1	60.7
1919	64,618	2,312,633,581	35,789	2.3	64.3
1920	64,368	2,340,761,196	36,365	1.6	67.0
1921	64,585	2,385,469,940	36,935	1.6	69.6
1922	64,149	2,401,451,501	37,441	1.4	71.9
1923	64,939	2,544,114,827	39,177	4.6	79.9
1924	65,006	2,593,178,015	39,891	1.8	83.1
1925	63,612	2,586,868,120	40,666	1.9	86.7
1926	62,342	2,611,237,975	41,886	3.0	92.3
1927	60,895	2,606,171,030	42,798	2.2	96.5
1928	58,845	2,579,643,450	43,838	2.4	101.3
1929	56,936	2,550,812,775	44,801	2.2	105.7
1930	55,875	2,526,939,860	45,225	0.9	107.6
1931	54,385	2,488,860,920	45,764	1.2	110.1
1932	52,492	2,430,328,270	46,299	1.2	112.6
1933	50,064	2,348,821,480	46,916	1.3	115.4
1934	47,436	2,263,267,070	47,712	1.7	119.1
1935	45,614	2,206,200,838	48,367	1.4	122.1
1936	44,162	2,162,704,768	48,972	1.3	124.8
1937	43,624	2,155,555,000	49,412	0.9	126.9
1938	42,637	2,123,464,000	49,803	0.8	128.7
1939	41,117	2,072,110,000	50,395	1.2	131.4

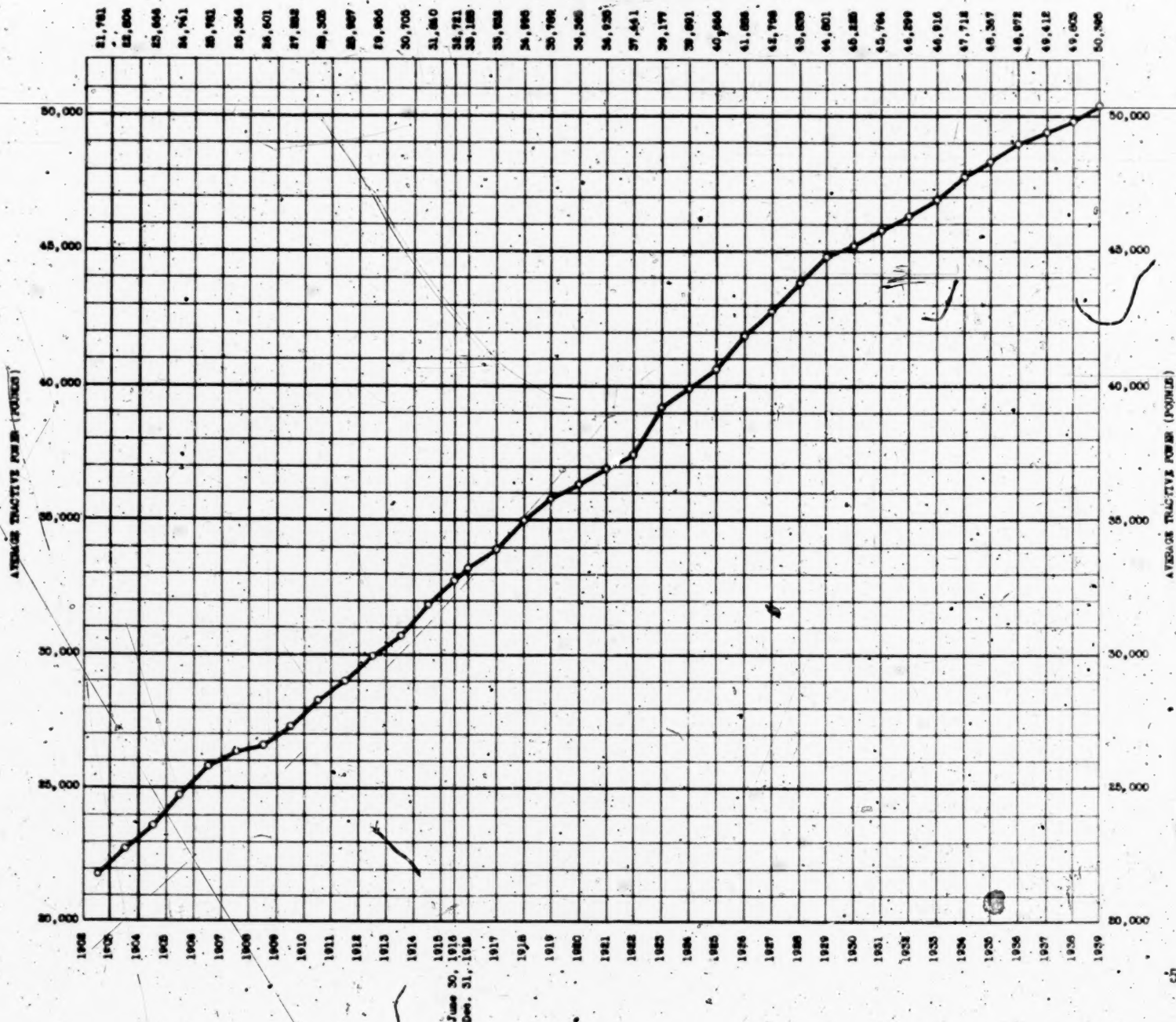
Source: 1903-1938, Statistics of Railways in the United States, Interstate Commerce Commission; 1939, Preliminary Abstract of Railway Statistics, Interstate Commerce Commission.

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(Here follows 1 photolithograph, side folio 5344:)

Defendant's Exhibit No. 34 (Witness Otterback)
Nov. 28, 1940

AVERAGE TRACTIVE POWER PER STEAM LOCOMOTIVE
ALL RAILWAYS, UNITED STATES, 1903-1910
CLASS 1 RAILWAYS, UNITED STATES, 1911-1939



[fols. 5345-5346]

DEFENDANT'S EXHIBIT No. 35

(Witness P. G. Otterback) Nov. 28, 1940

Average Tractive Power By Types Of Locomotive
Class I Railways, United States

Year ended	Freight locos. a (lbs.)	Passenger locos. b (lbs.)	Frt. or pass. locos. (lbs.)	Switching locos. (lbs.)
June 30, 1915	33,200	27,811	c	27,164
1916	34,234	28,075	c	27,867
Dec. 31, 1916	34,792	28,331	c	28,067
1924	46,060	28,702	29,747	33,045
1925	46,932	29,234	32,705	33,792
1926	48,222	30,432	36,192	34,488
1927	49,186	31,469	36,533	35,544
1928	50,314	32,469	36,865	36,321
1929	51,368	33,328	37,321	37,230
1930	51,672	32,945	44,198	37,767
1931	52,219	33,438	44,579	38,190
1932	52,693	34,087	43,954	38,451
1933	53,314	34,512	44,332	38,880
1934	54,074	35,378	45,913	39,241
1935	54,657	36,255	47,221	39,693
1936	55,249	36,777	48,112	40,139
1937	55,592	37,192	50,079	40,152
1938	55,943	37,793	51,943	40,327

a For years 1915 and 1916, includes road service locomotives with drivers 69 inches or less in diameter.

b For years 1915 and 1916, includes road service locomotives with drivers more than 69 inches in diameter.

c Not reported separately.

Source: Statistics of Railways in the United States, Interstate Commerce Commission.

[fols. 5347-5348]

DEFENDANT'S EXHIBIT No. 36

(Witness P. G. Otterback) Nov. 28, 1940

Oil-Burning Steam Locomotives And Steam Locomotives Equipped With
Mechanical Stokers, With Superheaters, And With Boosters,
By Types Of Locomotive

Class I Railways, United States.

1. Oil-Burning Steam Locomotives

Year-ended	Total steam locomotives	Oil-burning steam locomotives Number	% of total
Dec. 31, 1924	65,006	7,326	11.3
1925	63,612	7,201	11.3
1926	62,342	7,302	11.7
1927	60,395	7,415	12.2
1928	58,845	7,500	12.7
1929	56,936	7,565	13.3
1930	55,375	7,472	13.4
1931	54,385	7,466	13.7
1932	52,492	7,268	13.8
1933	50,064	7,163	14.3
1934	47,436	6,792	14.3
1935	45,614	6,632	14.5
1936	44,162	6,551	14.8
1937	43,624	6,548	15.0
1938	42,637	6,459	15.1

2. Total Steam Locomotives, By Types

Year ended	Freight	Pass.	Frt. or pass.	Switch.	Total
Dec. 31, 1930	32,900	10,868	1,808	10,299	55,875
1931	32,063	10,430	1,824	10,068	54,385
1932	31,197	9,786	1,880	9,629	52,492
1933	29,935	9,107	1,838	9,184	50,064
1934	28,520	8,444	1,710	8,762	47,436
1935	27,462	7,983	1,612	8,557	45,614
1936	26,695	7,655	1,563	8,249	44,162
1937	26,517	7,522	1,692	7,893	43,624
1938	25,956	7,486	1,523	7,672	42,637

3. Oil-Burning Steam Locomotives, By Types

Year ended	Freight	Pass.	Frt. or pass.	Switch.	Total
Dec. 31, 1932	4,308	1,559	399	1,002	7,268
1933	4,253	1,526	385	999	7,163
1934	4,086	1,404	352	950	6,792
1935	3,982	1,382	333	935	6,632
1936	3,971	1,309	317	951	6,551
1937	3,947	1,338	335	928	6,548
1938	3,882	1,368	297	912	6,459

4. Percentage Relationship, By Types, Of Oil-Burning Steam Locomotives To Total Steam Locomotives

Year ended	Freight	Pass.	Frt. or pass.	Switch.	Total
Dec. 31, 1932	13.8	15.0	21.2	10.4	13.8
1933	14.2	16.8	20.9	10.9	14.3

[fol. 5349]

4. Percentage Relationship, By Types, Of Oil-Burning Steam Locomotives To Total Steam Locomotives (continued)

Year ended	Freight	Pass.	Frt. or pass.	Switch.	Total
Dec. 31, 1934	14.3	16.6	20.6	10.8	14.3
1935	14.5	17.3	20.7	10.9	14.5
1936	14.9	17.1	20.3	11.6	14.8
1937	14.9	17.8	19.8	11.8	15.0
1938	15.0	18.3	19.5	11.9	15.1

5. Steam Locomotives Equipped With Mechanical Stokers, By Types

Year ended	Freight	Pass.	Frt. or pass.	Switch.	Total
Dec. 31, 1932	10,298	1,075	145	78	11,596
1933	10,282	1,078	146	77	11,583
1934	10,230	1,092	153	82	11,557
1935	10,141	1,139	161	82	11,523
1936	10,097	1,210	152	87	11,546
1937	10,290	1,321	235	77	12,023
1938	10,329	1,574	237	61	12,201

6. Percentage Relationship, By Types, Of Steam Locomotives Equipped With Mechanical Stokers To Total Steam Locomotives

Year ended	Freight	Pass.	Frt. or pass.	Switch.	Total
Dec. 31, 1932	33.0	11.0	7.7	0.8	22.1
1933	34.3	11.8	7.9	0.8	23.1
1934	35.9	12.9	8.9	0.9	24.4
1935	36.9	14.3	10.0	1.0	25.3
1936	37.8	15.8	9.7	1.1	26.1
1937	38.8	18.9	13.9	1.0	27.6
1938	39.8	21.0	15.6	0.8	28.6

7. Oil-Burning Steam Locomotives And Steam Locomotives Equipped
With Mechanical Stokers, Combined, By Types

Year ended	Freight	Pass.	Frt. or pass.	Switch.	Total
Dec. 31, 1932.....	14,606	2,634	544	1,080	18,864
1933.....	14,535	2,604	531	1,076	18,746
1934.....	14,316	2,496	505	1,032	18,349
1935.....	14,123	2,521	491	1,017	18,155
1936.....	14,068	2,519	469	1,041	18,097
1937.....	14,237	2,759	570	1,005	18,571
1938.....	14,211	2,942	534	973	18,660

[fol. 5350]

8. Percentage Relationship, By Types, Of Oil-Burning Steam
Locomotives And Steam Locomotives Equipped With Mechanical
Stokers, Combined, To Total Steam Locomotives

Year ended	Freight	Pass.	Frt. or pass.	Switch.	Total
Dec. 31, 1932.....	46.8	26.9	28.9	11.2	35.9
1933.....	48.6	28.6	28.9	11.7	37.4
1934.....	50.2	29.6	29.5	11.8	38.7
1935.....	51.4	31.6	30.6	11.9	39.8
1936.....	52.7	32.9	30.0	12.6	41.0
1937.....	53.7	36.7	33.7	12.7	42.6
1938.....	54.8	39.3	35.1	12.7	43.8

9. Steam Locomotives Equipped With Superheaters, By Types

Year ended	Freight	Pass.	Frt. or pass.	Switch.	Total
Dec. 31, 1932.....	25,763	8,215	1,552	5,214	40,734
1933.....	25,297	7,940	1,538	5,099	39,874
1934.....	24,786	7,594	1,510	5,050	38,940
1935.....	24,391	7,399	1,517	5,098	38,405
1936.....	24,115	7,085	1,514	5,035	37,749
1937.....	24,143	7,124	1,633	4,864	37,764
1938.....	23,748	7,151	1,492	4,844	37,235

10. Percentage Relationship, By Types, Of Steam Locomotives Equipped
With Superheaters To Total Steam Locomotives

Year ended	Freight	Pass.	Frt. or pass.	Switch.	Total
Dec. 31, 1932.....	82.5	83.9	82.6	54.1	77.6
1933.....	84.5	87.2	83.7	55.5	79.6
1934.....	86.9	89.9	88.3	57.6	82.1
1935.....	88.8	92.7	94.1	59.6	84.2
1936.....	90.3	92.6	96.9	61.0	85.5
1937.....	91.0	94.7	96.5	61.6	86.6
1938.....	91.5	95.5	98.0	63.1	87.3

11. Steam Locomotives Equipped With Boosters, By Types

Year ended	Freight	Pass.	Frt. or pass.	Switch.	Total
Dec. 31, 1930	3,049	731	177	22	3,979
1931	3,103	772	180	20	4,075
1932	3,071	733	177	19	4,000
1933	3,124	707	177	19	4,027
1934	3,022	690	176	20	3,908
1935	3,016	706	176	18	3,916
1936	2,967	696	179	18	3,860
1937	2,962	734	196	17	3,909
1938	2,918	731	191	15	3,861

[fol. 5351]

12. Percentage Relationship, By Types, Of Steam Locomotives Equipped With Boosters To Total Steam Locomotives

Year ended	Freight	Pass.	Frt. or pass.	Switch.	Total
Dec. 31, 1930	9.3	6.7	9.8	0.2	7.1
1931	9.7	7.4	9.9	0.2	7.5
1932	9.8	7.5	9.4	0.2	7.6
1933	10.4	7.8	9.6	0.2	8.0
1934	10.6	8.2	10.3	0.2	8.2
1935	11.0	8.8	10.9	0.2	8.6
1936	11.1	9.1	11.5	0.2	8.7
1937	11.2	9.8	11.6	0.2	9.0
1938	11.2	9.8	12.7	0.2	9.1

13. Average Tractive Power Per Booster, By Types Of Locomotive

Year ended	Freight (lbs.)	Pass. (lbs.)	Frt. or pass. (lbs.)	Switch. (lbs.)	Total (lbs.)
Dec. 31, 1930	11,552	10,335	11,128	19,405	11,353
1931	11,188	10,337	11,227	20,110	11,072
1932	11,287	10,164	11,128	20,521	11,118
1933	11,506	10,453	11,128	19,816	11,344
1934	11,512	10,479	11,143	19,260	11,353
1935	11,501	10,513	11,143	20,244	11,347
1936	11,485	10,539	11,134	19,278	11,334
1937	11,471	10,977	11,224	19,765	11,402
1938	11,408	10,729	11,227	20,800	11,307

Source: Basic data from Statistics of Railways in the United States, Interstate Commerce Commission.

[fols. 5352-5353]

DEFENDANT'S EXHIBIT No. 37

(Witness P. G. Otterback) Nov. 28, 1940

Number Of Freight-Carrying Cars For Which Capacity Was Reported,
Aggregate Car Capacity Reported, And Average Capacity Per
Freight-Carrying Car

All Railways, United States, 1903-1910

Class I Railways, United States, 1911-1939

Year ended	Number of cars	Agg. cap. (tons)	Aver. cap. (tons)	% increase over Pre. year 1903	
June 30, 1903.....	1,650,615	48,530,281	29.4		
1904.....	1,688,341	50,759,133	30.1	2.4	2.4
1905.....	1,727,620	53,255,083	30.8	2.3	4.8
1906.....	1,833,635	59,059,302	32.2	4.5	9.5
1907.....	1,986,017	67,033,324	33.8	5.0	15.0
1908.....	2,096,234	73,086,522	34.9	3.3	18.7
1909.....	2,071,338	73,137,546	35.3	1.1	20.1
1910.....	2,133,531	76,578,735	35.9	1.7	22.1
1911.....	2,117,644	78,100,000	36.9	2.8	25.5
1912.....	2,140,687	80,200,000	37.5	1.6	27.6
1913.....	2,209,533	84,600,000	38.3	2.1	30.3
1914.....	2,263,015	88,400,000	39.1	2.1	33.0
1915.....	2,258,855	89,837,847	39.8	1.8	35.4
1916.....	2,236,312	90,766,094	40.6	2.0	38.1
Dec. 31, 1916.....	2,253,111	92,280,335	41.0	1.0	39.5
1917.....	2,301,947	95,467,054	41.5	1.2	41.2
1918.....	2,325,562	96,766,585	41.6	0.2	41.5
1919.....	2,361,002	99,001,041	41.9	0.7	42.5
1920.....	2,322,025	98,342,666	42.4	1.2	44.2
1921.....	2,315,595	98,504,017	42.5	0.2	44.6
1922.....	2,293,389	98,846,836	43.1	1.4	46.6
1923.....	2,315,609	101,318,213	43.8	1.6	49.0
1924.....	2,348,722	104,149,381	44.3	1.1	50.7
1925.....	2,357,221	105,569,670	44.8	1.1	52.4
1926.....	2,348,643	105,952,818	45.1	0.7	53.4
1927.....	2,324,799	105,845,568	45.5	0.9	54.8
1928.....	2,297,549	105,321,832	45.8	0.7	55.8
1929.....	2,277,464	105,416,586	46.3	1.1	57.5
1930.....	2,276,793	106,179,768	46.6	0.6	58.5
1931.....	2,201,407	103,421,700	47.0	0.9	59.9
1932.....	2,144,631	100,901,484	47.0		59.9
1933.....	2,034,788	96,734,269	47.5	1.1	61.6
1934.....	1,938,277	92,968,503	48.0	1.1	63.3
1935.....	1,835,654	88,677,106	48.3	0.6	64.3
1936.....	1,758,093	85,721,064	48.8	1.0	66.0
1937.....	1,743,743	85,808,067	49.2	0.8	67.3
1938.....	1,699,597	84,032,035	49.4	0.4	68.0
1939.....	1,650,031	82,001,557	49.7	0.6	69.0

Source: 1903-1938, Statistics of Railways in the United States, Interstate Commerce Commission; 1939, Preliminary Abstract of Railway Statistics, Interstate Commerce Commission.

[fols. 5354-5355]

DEFENDANT'S EXHIBIT No. 38

(Witness P. G. Otterback) Nov. 28, 1940

Total Freight-Train Cars, Steel Freight-Train Cars, Steel Underframe
Freight-Train Cars And Other Freight-Train Cars: Caboose, Cars Excluded

Class I Railways, United States

Year ended	Total cars	Steel cars	Steel und. cars	Steel & steel und. cars	Other cars
June 30, 1915	2,258,855	501,309	676,176	1,177,485	1,081,370
1916	2,236,379	537,237	729,859	1,267,096	969,283
Dec. 31, 1916	2,253,233	561,770	763,066	1,324,836	928,397
1917	2,302,059	595,536	802,431	1,397,967	904,092
1918	2,325,673	612,255	832,472	1,444,727	880,946
1919	2,361,102	637,445	868,262	1,505,707	855,395
1920	2,322,122	630,150	886,296	1,516,446	805,676
1921	2,315,692	640,891	903,240	1,544,131	771,561
1922	2,293,392	668,107	910,608	1,578,710	714,682
1923	2,315,612	680,685	992,212	1,672,897	642,715
1924	2,348,725	720,934	1,028,506	1,749,460	599,265
1925	2,337,234	757,065	1,056,125	1,813,190	544,041
1926	2,348,679	784,191	1,076,696	1,860,797	487,882
1927	2,324,834	799,820	1,086,982	1,886,802	438,032
1928	2,297,589	803,587	1,099,016	1,902,603	394,986
1929	2,277,505	829,154	1,103,121	1,932,275	345,230
1930	2,276,867	854,864	1,118,257	1,973,121	303,746
1931	2,201,510	843,542	1,101,565	1,945,107	256,403
1932	2,144,730	834,924	1,078,353	1,913,277	231,453
1933	2,034,886	816,548	1,038,276	1,854,824	180,062
1934	1,938,362	819,673	974,920	1,794,593	143,769
1935	1,835,736	809,612	908,252	1,717,864	117,872
1936	1,758,192	825,081	831,885	1,656,966	101,226
1937	1,743,834	890,612	768,776	1,659,388	84,446
1938	1,699,689	891,498	730,218	1,621,716	77,973

Source: Statistics of Railways in the United States, Interstate Commerce Commission.

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Percentage Relationship to Total Freight-Train Cars Of Steel,
Steel Underframe and Other Freight-Train Cars

Class I Railways, United States

Year ended	Steel cars	Steel und. cars	Steel & steel und. cars	Other cars
1915	22.2%	29.9%	52.1%	47.9%
1916	24.0	32.6	56.6	43.4
1917	24.9	33.9	58.8	41.2
1918	25.9	34.9	60.8	39.2
1919	26.3	35.8	62.1	37.9
1920	27.0	36.8	63.8	36.2
1921	27.1	38.2	65.3	34.7
1922	27.7	39.0	66.7	33.3
1923	29.1	39.7	68.8	31.2
1924	29.4	42.8	72.2	27.8
1925	30.7	43.8	74.5	25.5
1926	32.1	44.8	76.9	23.1
1927	33.4	45.8	79.2	20.8
1928	34.4	46.8	81.2	18.8
1929	35.0	47.8	82.8	17.2
1930	36.4	48.4	84.8	15.2
1931	37.5	49.1	86.6	13.4
1932	38.3	50.0	88.3	11.7
1933	38.9	50.3	89.2	10.8
1934	40.1	51.0	91.1	8.9
1935	42.8	50.3	92.6	7.4
1936	44.1	49.5	93.6	6.4
1937	46.9	47.3	94.2	5.8
1938	51.1	44.1	95.2	4.8
	52.5	43.0	95.5	4.5

Source: Calculated from basic figures on preceding page.

[fols. 5357-5358]

DEFENDANT'S EXHIBIT No. 39

(Witness P. G. Otterback) Nov. 28, 1940

Freight Operating Revenues, Freight Operating Expenses, And Freight Operating Ratio

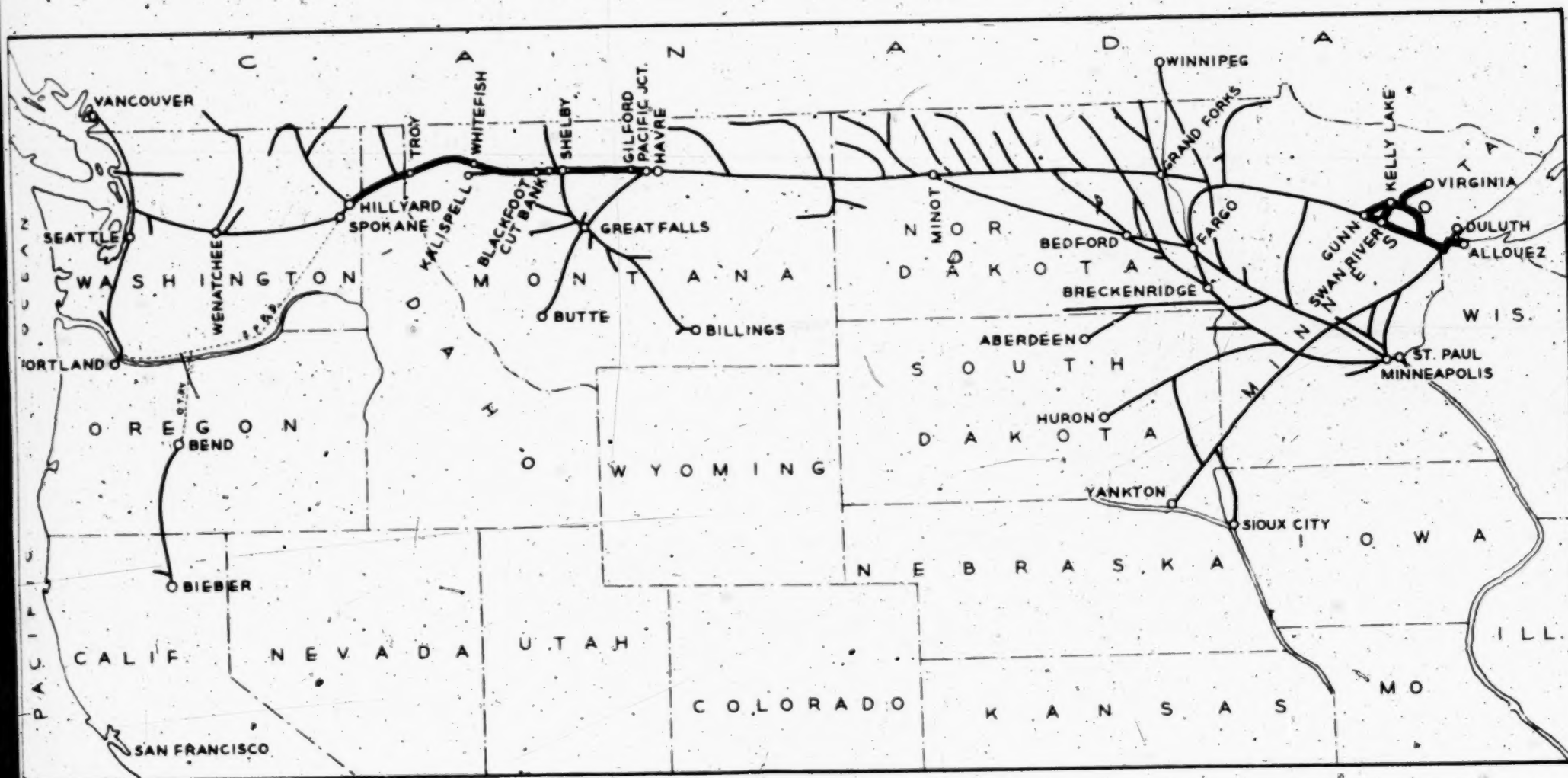
Class I Railways, United States

Cal. year	Freight operating revenues	Freight operating expenses	Freight operating ratio
1921	\$3,924,119,819	\$3,308,017,824	84.3%
1922	4,005,558,722	3,224,809,492	80.5
1923	4,622,364,989	3,666,250,197	79.3
1924	4,345,538,231	3,312,213,685	76.2
1925	4,552,756,017	3,339,486,272	73.4
1926	4,809,640,798	3,455,818,287	71.9
1927	4,643,517,011	3,362,723,443	72.4
1928	4,691,147,326	3,254,038,603	69.4
1929	4,825,622,121	3,330,206,865	69.0
1930	4,083,241,558	2,848,168,947	69.8
1931	3,254,667,938	2,302,772,090	70.8
1932	2,450,829,130	1,693,926,052	69.1
1933	2,492,678,146	1,615,745,153	64.8
1934	2,633,399,103	1,766,073,788	67.1
1935	2,790,551,400	1,870,813,674	67.0
1936	3,308,540,696	2,171,315,564	65.6
1937	3,377,908,424	2,310,115,609	68.4
1938	2,858,077,292	1,967,626,335	68.8
1939	3,251,096,182	2,142,978,114	65.9

Cal. year	Rev. per ton-mile (cents)	Revenue ton-miles (thousands)	Adjusted frt. oper. revenues	Adjusted frt. oper. ratio
1921	1.275	306,840,204	\$3,924,119,819	84.3%
1922	1.177	339,285,348	4,325,888,000	74.5
1923	1.116	412,727,228	5,262,272,000	69.7
1924	1.116	388,415,312	4,952,295,000	66.9
1925	1.097	413,814,261	5,276,132,000	63.3
1926	1.081	443,746,487	5,657,768,000	61.1
1927	1.080	428,736,962	5,466,396,000	61.5
1928	1.081	432,915,185	5,519,669,000	59.0
1929	1.076	447,321,561	5,703,350,000	58.4
1930	1.062	383,449,588	4,888,982,000	58.3
1931	1.051	309,224,879	3,942,617,000	58.4
1932	1.046	233,977,009	2,983,207,000	56.8
1933	0.999	249,223,180	3,177,596,000	50.8
1934	0.978	268,710,507	3,426,059,000	51.5
1935	0.988	282,036,932	3,595,971,000	52.0
1936	0.974	339,245,826	4,325,384,000	50.2
1937	0.935	360,620,269	4,597,908,000	50.2
1938	0.983	290,084,371	3,698,576,000	53.2
1939	0.973	333,438,412	4,251,340,000	50.4

Source: 1921-1938, inclusive, Statistics of Railways in the United States, Interstate Commerce Commission; 1939, Preliminary Abstract of Railway Statistics, Interstate Commerce Commission.

Defendant's Exhibit No. 42 ~~194~~ (Witness C.L. LaFontaine
Nov. 28, 1940)



GREAT NORTHERN RAILWAY CO.

— HEAVY LINE INDICATES TERRITORY COVERED
BY TYPICAL FREIGHT TRAIN EXHIBITS.

**FREIGHT TRAINS OPERATED ON KALISPELL DIVISION
DURING TEN-DAY PERIOD, AUGUST 15TH TO 24TH, INCLUSIVE, 1939**

LINE NO. (a)	FROM (b)	TO (c)	DIS- TANCE (Miles) (d)	RULING GRADE (e)	70 CARS OR LESS							71 CARS TO 100 CARS							101 CARS TO 125 CARS							NO. OF TRAINS (aa)	T _L LOC													
					NO. OF TRAINS (f)	TYPE OF LOCOMOTIVE (g)	AVERAGE CONSIST					NO. OF TRAINS (m)	TYPE OF LOCOMOTIVE (n)	AVERAGE CONSIST					NO. OF TRAINS (t)	TYPE OF LOCOMOTIVE (u)	AVERAGE CONSIST																			
							A	B	C	D	TONS (l)			A	B	C	D	TONS (o)			A	B	C	D	TONS (v)															
1	Havre	Fremont	15	1.00	1	Mikado	-	25	-	25	1,750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
2	Fremont	Havre	15	0.80	1	Mikado	-	-	17	17	374	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
3	Havre	Gilford	29	1.00	1	Mikado	-	21	15	36	1,715	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
4	Gilford	Havre	29	0.80	1	Mikado	-	28	16	44	2,350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
5	Havre	Shelby	105	1.00	5	Mikado	-	30	16	36	1,625	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
6	Shelby	Havre	105	0.80	5	Mikado	-	34	15	49	2,646	1	Mikado	-	42	38	80	3,235	-	-	-	-	-	-	-	-	-													
7	Havre	Blackfoot	155	1.00	2	2-8-2	1	39	8	68	3,600	14	2-8-2	2	46	40	88	3,496	6	2-8-2	-	18	98	116	3,746	-	-													
8	Blackfoot	Havre	155	0.80	1	2-8-2	36	32	-	68	2,755	14	2-8-2	9	83	1	93	4,885	6	2-8-2	5	84	15	104	5,332	-	-													
9	Shelby	Cut Bank	24	1.00	9	Mikado	-	3	28	31	798	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
10	Cut Bank	Shelby	24	0.80	8	Mikado	-	21	2	23	1,227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
11	Shelby	Blackfoot	51	1.00	5	Mikado	-	16	7	23	1,037	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
12	Blackfoot	Shelby	51	0.80	5	Mikado	-	10	14	24	697	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
13	Shelby	Blackfoot	51	1.00	1	2-8-2	1	45	21	67	3,400	3	2-8-2	1	43	39	83	3,588	-	-	-	-	-	-	-	-	-													
14	Blackfoot	Shelby	51	0.80	3	2-8-2	2	28	19	49	1,992	1	2-8-2	1	51	22	73	3,100	1	2-8-2	-	39	63	102	3,550	-	-													
15	Blackfoot	Whitefish	101	1.00	5	Mikado	-	24	21	45	1,678	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
16	Whitefish	Blackfoot	101	1.80	4	Mikado	-	24	5	29	964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
17	Blackfoot	Whitefish	101	1.00	5	2-8-2	1	54	11	66	3,436	15	2-8-2	2	41	45	88	3,306	5	2-8-2	-	16	98	114	3,606	-	-													
18	Whitefish	Blackfoot	101	1.80	6	2-8-2	11	37	9	57	2,515	13	2-8-2	9	81	1	91	4,800	6	2-8-2	5	70	31	106	4,623	-	-													
19	Whitefish	KalisPELL	22	0.60	9	Consolid'n	1	17	12	30	1,097	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
20	KalisPELL	Whitefish	22	0.80	9	Consolid'n	-	19	12	31	1,216	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
21	Whitefish	Troy	135	0.25	10	Mikado	-	20	20	40	1,554	6	Mikado	-	44	37	81	3,480	4	Mikado	-	9	111	120	3,394	1	Mik													
22	Troy	Whitefish	135	0.70	15	Mikado	4	28	5	37	1,736	3	Mikado	8	79	6	93	4,688	2	Mikado	5	97	7	109	5,025	1	Mik													
23	Whitefish	Troy	135	0.25	1	4-8-4	-	37	5	62	3,400	7	4-8-4	2	55	18	75	3,335	2	4-8-4	-	2	120	122	3,323	-	-													
24	Troy	Whitefish	135	0.70	1	4-8-4	5	47	14	66	3,030	5	4-8-4	11	80	1	92	4,849	4	4-8-4	10	89	9	108	5,081	-	-													
25	Troy	Whitefish	135	0.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2-8-2	4	99	7	110	5,160	-	-													
26	Troy	Hillyard	135	0.60	10	Mikado	-	28	17	45	1,951	6	Mikado	-	33	48	81	3,232	3	Mikado	-	9	106	115	3,350	2	Mik													
27	Hillyard	Troy	135	0.60	16	Mikado	4	22	6	32	1,403	3	Mikado	9	84	2	95	4,841	2	Mikado	4	92	12	108	4,820	-	-													
28	Troy	Hillyard	135	0.60	1	4-8-4	-	37	5	62	3,400	7	4-8-4	2	54	18	74	3,306	2	4-8-4	-	1	112	113	3,300	-	-													
29	Hillyard	Troy	135	0.60	1	4-8-4	5	41	12	38	2,586	5	4-8-4	11	80	1	92	4,846	4	4-8-4	10	89	9	108	5,100	-	-													
30	Troy	Hillyard	135	0.60	1	Pacific	-	14	18	32	1,150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
31	Hillyard	Troy	135	0.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2-8-2	4	99	7	110	5,160	-	-													
32	TOTAL TRAINS				298	142											103											49											4	
33	PER CENT OF ALL TRAINS				100	47.7											34.6											16.4											1.3	
34	AVERAGE CARS PER TRAIN				68	38											87											111											129	

IV, 1939

101 CARS TO 125 CARS							126 CARS AND OVER							MAXIMUM CARS PER TRAIN
OF. AINS (t)	TYPE OF LOCOMOTIVE (u)	AVERAGE CONSIST					NO. OF TRAINS (aa)	TYPE OF LOCOMOTIVE (bb)	AVERAGE CONSIST					
		A (v)	B (w)	C (x)	D (y)	TONS (z)			A (cc)	B (dd)	C (ff)	D (gg)	TONS (hh)	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	25
-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
-	-	-	-	-	-	-	-	-	-	-	-	-	-	36
-	-	-	-	-	-	-	-	-	-	-	-	-	-	44
-	-	-	-	-	-	-	-	-	-	-	-	-	-	47
-	-	-	-	-	-	-	-	-	-	-	-	-	-	80
6	2-8-8-2	-	18	98	116	3,746	-	-	-	-	-	-	-	124
6	2-8-8-2	5	84	15	104	5,332	-	-	-	-	-	-	-	114
-	-	-	-	-	-	-	-	-	-	-	-	-	-	53
-	-	-	-	-	-	-	-	-	-	-	-	-	-	29
-	-	-	-	-	-	-	-	-	-	-	-	-	-	29
-	-	-	-	-	-	-	-	-	-	-	-	-	-	34
-	-	-	-	-	-	-	-	-	-	-	-	-	-	96
1	2-8-8-2	-	39	63	102	3,550	-	-	-	-	-	-	-	102
-	-	-	-	-	-	-	-	-	-	-	-	-	-	54
-	-	-	-	-	-	-	-	-	-	-	-	-	-	37
5	2-8-8-2	-	16	98	114	3,606	-	-	-	-	-	-	-	123
6	2-8-8-2	5	70	31	106	4,623	-	-	-	-	-	-	-	116
-	-	-	-	-	-	-	-	-	-	-	-	-	-	44
-	-	-	-	-	-	-	-	-	-	-	-	-	-	45
4	Mikado	-	9	111	120	3,394	1	Mikado	-	-	129	129	3,050	129
2	Mikado	5	97	7	109	5,025	1	Mikado	3	100	27	130	5,640	130
2	4-8-4	-	2	120	122	3,323	-	-	-	-	-	-	-	124
4	4-8-4	10	89	9	108	5,081	-	-	-	-	-	-	-	114
1	2-8-8-2	4	99	7	110	5,160	-	-	-	-	-	-	-	110
3	Mikado	-	9	106	115	3,590	2	Mikado	-	4	124	128	3,175	129
2	Mikado	4	92	12	108	4,820	-	-	-	-	-	-	-	115
2	4-8-4	-	1	112	113	3,300	-	-	-	-	-	-	-	119
4	4-8-4	10	89	9	108	5,100	-	-	-	-	-	-	-	115
-	-	-	-	-	-	-	-	-	-	-	-	-	-	32
1	2-8-8-2	4	99	7	110	5,160	-	-	-	-	-	-	-	110
49							4							
6.4							1.3							
111							129							

Defendant's Exhibit No. 44 (Witness C.L. LaFontaine)
Dec. 3, 1940

PLANATION OF SYMBOLS USED BELOW
UNDER HEADING "AVERAGE CONSIST"

- Perishable loads
- Other loads
- Empty cars, not including caboose
- Total all cars

GREAT NORTHERN RAILWAY COMPANY

ORE TRAINS OPERATED ON MESABI DIVISION
AUGUST 15TH TO AUGUST 24TH, INCLUSIVE, 1939

LINE NO.	FROM	TO	DISTANCE (Miles)	RULING GRADE	70 CARS OR LESS						71 CARS TO 100 CARS						101 CARS TO 125 CARS										
					NO. OF TRAINS	TYPE OF LOCOMOTIVE	AVERAGE CONSIST				NO. OF TRAINS	TYPE OF LOCOMOTIVE	AVERAGE CONSIST				NO. OF TRAINS	TYPE OF LOCOMOTIVE	AVERAGE CONSIST								
							A	B	C	D			TONS	A	B	C			D	TONS	A	B	C	D	TONS		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)	(t)	(u)	(v)	(w)	(x)	(y)	(z)		
1	Kelly Lake	Alloues via Casco	100.00	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
2	Nashua	Alloues	122.00	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
3	Calumet	Alloues	115.00	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
4	Gunn	Alloues	100.00	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
5	Alloues	Kelly Lake via Casco	100.00	0.6*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
6	Alloues	Kelly Lake via Swan River	109.00	1.0*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
7	Alloues	Gunn	100.00	0.4*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
8	TOTAL NUMBER OF TRAINS				-							-							-								
PER CENT OF TOTAL AVERAGE CARS PER TRAIN																											

* - Except about .5 miles of 1.15% grade at State Line Tower

ION
, 1939

101 CARS TO 125 CARS									126 CARS AND OVER							MAXIMUM CARS PER TRAIN
CONSIST		NO. OF TRAINS	TYPE OF LOCOMOTIVE	AVERAGE CONSIST					NO. OF TRAINS	TYPE OF LOCOMOTIVE	AVERAGE CONSIST					
D (r)	TONS (s)			A (v)	B (w)	C (x)	D (y)	TONS (z)			A (cc)	B (dd)	C (ee)	D (ff)	TONS (gg)	
-	-	-	-	-	-	-	-	-	32	Mallet	-	182	-	182	25437	185
-	-	-	-	-	-	-	-	-	9	Mallet	-	182	-	182	15676	185
-	-	-	-	-	-	-	-	-	21	Mallet	-	182	-	182	15771	186
-	-	-	-	-	-	-	-	-	4	Mallet	-	182	-	182	15431	185
-	-	-	-	-	-	-	-	-	19	Mallet	-	-	180	180	3632	180
-	-	-	-	-	-	-	-	-	44	Mallet	-	-	178	178	3582	180
-	-	-	-	-	-	-	-	-	4	Mallet	-	-	180	180	3595	180
		-							133							

100
180.3

5361

MAXIMUM NUMBER OF CARS HANDLED
IN MAIN LINE PASSENGER TRAINS NOS. 1 AND 2
TOTAL FOR THE TEN DAY PERIOD: JUNE 1ST TO 10TH, INCLUSIVE, 1939

LINE NO. (a)	TRAIN NO. (b)	ROUTE & TRAIN NAME (c)	MILES (d)	NUMBER OF CARS											TOTAL (o)
				10 CARS OR LESS (e)	11 (f)	12 (g)	13 (h)	14 (i)	15 (j)	16 (k)	17 (l)	18 (m)	OVER 18 (n)		
ST. PAUL - FARGO															
1	1	WEST Empire Builder	262	-	-	1	4	3	2	-	-	-	-	10	
2	2	EAST Empire Builder	262	-	-	-	-	-	4	1	3	2	-	10	
3		TOTAL		-	-	1	4	3	6	1	3	2	-	20	
4		PER CENT OF TOTAL		-	-	5.00	20.00	15.00	30.00	5.00	15.00	10.00	-		
TOTAL TRAINS OVER 14 CARS 12 or 60.00%															
TOTAL TRAINS 14 CARS OR UNDER 8 or 40.00%															
TOTAL TRAINS 20 or 100.00%															
FARGO - HAVRE															
5	1	WEST Empire Builder	715	-	-	1	4	3	2	-	-	-	-	10	
6	2	EAST Empire Builder	663	-	-	-	-	3	3	2	2	-	-	10	
7		TOTAL		-	-	1	4	6	5	2	2	-	-	20	
8		PER CENT OF TOTAL		-	-	5.00	20.00	30.00	25.00	10.00	10.00	-	-		
TOTAL TRAINS OVER 14 CARS 9 or 45.00%															
TOTAL TRAINS 14 CARS OR UNDER 11 or 55.00%															
TOTAL TRAINS 20 or 100.00%															
HAVRE - SPOKANE															
9	1	WEST Empire Builder	530	-	1	3	5	-	1	-	-	-	-	10	
10	2	EAST Empire Builder	530	-	-	1	3	4	1	1	-	-	-	10	
11		TOTAL		-	1	4	8	4	2	1	-	-	-	20	
12		PER CENT OF TOTAL		-	5.00	20.00	40.00	20.00	10.00	5.00	-	-	-		
TOTAL TRAINS OVER 14 CARS 3 or 15.00%															
TOTAL TRAINS 14 CARS OR UNDER 17 or 85.00%															
TOTAL TRAINS 20 or 100.00%															
SPOKANE - SEATTLE															
13	1	WEST Empire Builder	330	-	-	1	7	-	2	-	-	-	-	10	
14	2	EAST Empire Builder	330	-	-	-	-	3	5	1	1	-	-	10	
15		TOTAL		-	-	1	7	3	7	1	1	-	-	20	
16		PER CENT OF TOTAL		-	-	5.00	35.00	15.00	35.00	5.00	5.00	-	-		
TOTAL TRAINS OVER 14 CARS 9 or 45.00%															
TOTAL TRAINS 14 CARS OR UNDER 11 or 55.00%															

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
		<u>ST. PAUL - FARGO</u>												
1	1	<u>WEST</u> Empire Builder	262	-	-	1	4	3	2	-	-	-	-	10
2	2	<u>EAST</u> Empire Builder	262	-	-	-	-	-	4	1	3	2	-	10
3		TOTAL		-	-	1	4	3	6	1	3	2	-	20
4		PER CENT OF TOTAL		-	-	5.00	20.00	15.00	30.00	5.00	15.00	10.00	-	
TOTAL TRAINS OVER 14 CARS 12 or 60.00% TOTAL TRAINS 14 CARS OR UNDER 8 or 40.00% TOTAL TRAINS 20 or 100.00%														
		<u>FARGO - HAVRE</u>												
5	1	<u>WEST</u> Empire Builder	715	-	-	1	4	3	2	-	-	-	-	10
6	2	<u>EAST</u> Empire Builder	663	-	-	-	-	3	3	2	2	-	-	10
7		TOTAL		-	-	1	4	6	5	2	2	-	-	20
8		PER CENT OF TOTAL		-	-	5.00	20.00	30.00	25.00	10.00	10.00	-	-	
TOTAL TRAINS OVER 14 CARS 9 or 45.00% TOTAL TRAINS 14 CARS OR UNDER 13 or 55.00% TOTAL TRAINS 20 or 100.00%														
		<u>HAVRE - SPOKANE</u>												
9	1	<u>WEST</u> Empire Builder	530	-	1	3	5	-	1	-	-	-	-	10
10	2	<u>EAST</u> Empire Builder	530	-	-	1	3	4	1	1	-	-	-	10
11		TOTAL		-	1	4	8	4	2	1	-	-	-	20
12		PER CENT OF TOTAL		-	5.00	20.00	40.00	20.00	10.00	5.00	-	-	-	
TOTAL TRAINS OVER 14 CARS 3 or 15.00% TOTAL TRAINS 14 CARS OR UNDER 17 or 85.00% TOTAL TRAINS 20 or 100.00%														
		<u>SPOKANE - SEATTLE</u>												
13	1	<u>WEST</u> Empire Builder	330	-	-	1	7	-	2	-	-	-	-	10
14	2	<u>EAST</u> Empire Builder	330	-	-	-	-	3	5	1	1	-	-	10
15		TOTAL		-	-	1	7	3	7	1	1	-	-	20
16		PER CENT OF TOTAL		-	-	5.00	35.00	15.00	35.00	5.00	5.00	-	-	
TOTAL TRAINS OVER 14 CARS 9 or 45.00% TOTAL TRAINS 14 CARS OR UNDER 11 or 55.00% TOTAL TRAINS 20 or 100.00%														

RECAPITULATION			
	TOTAL TRAINS (p)	TOTAL OVER 14 (q)	PER CENT OF TOTAL (r)
St. Paul - Fargo	20	12	60.00
Fargo - Havre	20	9	45.00
Havre - Spokane	20	3	15.00
Spokane - Seattle	20	9	45.00
TOTAL	80	33	41.25

Defendant's Exhibit No. 46 (Witness W.M. Burn)
Dec. 3, 1940

Defts. Ex. No. _____ (Witness
GREAT NORTHERN RAILWAY COMPANY
FREIGHT OPERATING AND
FREIGHT TRANSPORTATION EXPENSES
RELATED TO TRAFFIC
CALENDAR YEARS 1922 TO 1939, INCLUSIVE
DEC 3

YEAR	REVENUE TON MILES	FREIGHT OPERATING EXPENSES	FREIGHT TRANSPORTATION EXPENSES	AVERAGE PER 1000 REVENUE TON MILES	
				FREIGHT OPERATING EXPENSES	FREIGHT TRANSP. EXPENSES
(a)	(b)	(c)	(d)	(e)	(f)
1939	8,681,459,839	\$46,396,286	\$22,054,786	\$ 5.34	\$ 2.54
1938	6,987,359,811	40,519,070	20,659,287	5.80	2.96
1937	9,441,838,978	46,373,342	23,832,234	4.91	2.52
1936	8,632,783,579	42,986,641	22,564,021	4.98	2.61
1935	7,372,079,484	37,075,813	19,492,794	5.03	2.64
1934	6,137,693,978	35,723,655	17,251,655	5.82	2.81
1933	5,431,602,934	30,100,622	14,876,161	5.54	2.74
1932	4,324,700,394	32,238,303	14,485,404	7.45	3.35
1931	6,151,063,399	39,320,203	18,433,440	6.39	3.00
1930	8,720,583,904	52,239,786	24,851,019	5.99	2.85
1929	10,150,709,921	61,386,902	29,006,204	6.05	2.86
1928	10,127,253,509	61,787,409	30,089,001	6.10	2.97
1927	8,958,349,961	57,495,372	28,042,083	6.42	3.13
1926	8,902,970,446	54,847,699	27,930,544	6.16	3.14
1925	8,517,913,981	53,896,566	28,208,086	6.33	3.31
1924	8,093,136,444	54,103,649	28,844,572	6.69	3.56
1923	8,754,272,702	64,170,783	33,988,661	7.33	3.88
1922	6,882,464,797	57,943,015	30,899,010	8.42	4.48
TOTAL 1936- 1939	33,743,442,207	176,275,339	89,110,328	5.22	2.64
TOTAL 1922- 1925	32,247,787,924	230,114,013	121,900,329	7.14	3.78
PER CENT OF IMPROVEMENT 4 YEARS 1936 - 1939 COMPARED WITH 1922 - 1925				22	27.2

YEAR	REVENUE TON MILES	FREIGHT OPERATING EXPENSES	FREIGHT TRANSPORTATION EXPENSES	AVERAGE PER 1000 REVENUE TON MILES	
				FREIGHT OPERATING EXPENSES	FREIGHT TRANSP. EXPENSES
(a)	(b)	(c)	(d)	(e)	(f)
1939	8,681,459,839	\$46,396,286	\$22,054,786	\$ 5.34	\$ 2.54
1938	6,987,359,811	40,519,070	20,659,287	5.80	2.96
1937	9,441,838,978	46,373,342	23,832,234	4.91	2.52
1936	8,632,783,579	42,986,641	22,564,021	4.98	2.61
1935	7,372,079,484	37,075,813	19,492,794	5.03	2.64
1934	6,137,693,978	35,723,655	17,251,655	5.82	2.81
1933	5,431,602,934	30,100,622	14,876,161	5.54	2.74
1932	4,324,700,394	32,238,303	14,485,404	7.45	3.35
1931	6,151,063,399	39,320,203	18,433,440	6.39	3.00
1930	8,720,583,904	52,239,786	24,851,019	5.99	2.85
1929	10,150,709,921	61,386,902	29,006,204	6.05	2.86
1928	10,127,253,509	61,787,409	30,089,001	6.10	2.97
1927	8,958,349,961	57,495,372	28,042,083	6.42	3.13
1926	8,902,970,446	54,847,699	27,930,544	6.16	3.14
1925	8,517,913,981	53,896,566	28,208,086	6.33	3.31
1924	8,093,136,444	54,103,649	28,844,572	6.69	3.56
1923	8,754,272,702	64,170,783	33,988,661	7.33	3.88
1922	6,882,464,797	57,943,015	30,899,010	8.42	4.48
TOTAL 1936- 1939	33,743,442,207	176,275,339	89,110,328	5.22	2.64
TOTAL 1922- 1925	32,247,787,924	230,114,013	121,900,329	7.14	3.78
PER CENT OF IMPROVEMENT 4 YEARS 1936 - 1939 COMPARED WITH 4 YEARS 1922 - 1925				26.9	30.2

SOURCE: Annual Reports to Interstate Commerce Commission

Defendant's Exhibit No. 47 (Witness W.M. Burn)
Dec. 3, 1940

GREAT NORTHERN RAILWAY COMPANY

FREIGHT SERVICE OPERATING AVERAGES

Calendar Years 1922, 1924, 1926, 1928, 1930, 1932, 1934, 1936, 1938 and 1939

Line No. (a)	Item (b)	1922 (c)	1924 (d)	1926 (e)	1928 (f)	1930 (g)	1932 (h)	1934 (i)	1936 (j)	1938 (k)	1939 (l)	Percent Increase 1939 over 1922 (m)
1	Miles of line operated in freight service	8 261	8 251	8 188	8 260	8 339	8 381	8 319	8 077	7 976	7 976	Dec. 3.4
2	Freight train miles	10 497 563	10 492 605	10 198 263	10 844 505	9 569 378	7 017 674	8 315 358	9 797 070	8 675 572	9 389 952	Dec. 10.5
3	Freight cars per freight train	41.0	47.6	54.6	55.2	53.4	42.4	49.5	53.9	50.9	56.0	36.6
4	Net tons per freight train	781	893	980	1 046	997	689	820	957	885	1 017	30.2
5	Average tractive power per locomotive (lbs.) - Steam locomotives only	39 169	41 104	44 447	48 418	50 149	52 436	53 060	53 600	55 317	56 886	45.2
6	Average capacity per freight carrying car (tons)	39.1	42.1	44.0	44.3	45.0	45.1	45.2	45.7	46.9	47.6	21.7
7	Freight train speed (m.p.h.)	10.3	11.1	11.6	11.8	13.0	14.9	14.9	14.9	14.9	14.9	44.7
8	Gross ton-miles per freight train-hour (Exclusive of locomotives and tenders) ..	16 494	20 748	24 654	26 256	28 021	24 991	29 294	32 574	31 526	35 462	115.0
9	Net ton-miles per freight train-hour	8 029	9 901	11 339	12 334	12 933	10 285	12 208	14 115	13 084	15 102	88.1
10	Gross ton-miles (Exclusive of locomotives and tenders) per ton of fuel	11 161	12 889	14 148	14 129	14 862	13 285	14 281	15 463	15 296	16 874	51.2

SOURCE: Items 1, 2, 3, 4, 7 and 8 - Reports of Freight Train Performance, Form OS-4, filed with Interstate Commerce Commission.

Item 5 - Total tractive effort ÷ total steam locomotives available for service at close of each year as reported in Schedule 417 of Annual Report to the Interstate Commerce Commission.

Item 6 - Aggregate capacity of all freight carrying cars ÷ total number of such cars available for service at close of year, as reported in Schedule 417 of Annual Report to the Interstate Commerce Commission.

Item 9 - Net ton miles ÷ train hours as reported on Form OS-4 to Interstate Commerce Commission.

Item 10 - Gross ton miles (cars, contents and cabooses) ÷ equated net tons of fuel consumed as reported to Interstate Commerce Commission in years 1922 to 1934, inclusive, on Form OS-4 and as reported in years 1936, 1938 and 1939 on Forms OS-4 and OS-E respectively.

Defendant's Exhibit No. 49 (Witness C.G. Gregory)
Dec. 3 1940

NORTHERN PACIFIC RAILWAY COMPANY

FREIGHT OPERATING AND FREIGHT TRANSPORTATION EXPENSES
RELATED TO TRAFFIC

CALENDAR YEARS 1922 TO 1939, INCLUSIVE

YEAR (a)	REVENUE TON-MILES (b)	FREIGHT OPERATING EXPENSES (c)	FREIGHT TRANSPORTATION EXPENSES (d)	AVERAGES PER 1000 REVENUE TON-MILES	
				FREIGHT OPERATING EXPENSES (e)	FREIGHT TRANSPORTATION EXPENSES (f)
1939	5,621,295,168	\$36,934,950	\$17,511,549	\$6.57	\$3.12
1938	4,712,217,960	33,854,352	16,535,729	7.18	3.51
1937	5,776,545,781	39,086,490	18,880,700	6.77	3.27
1936	5,277,964,003	36,154,035	17,713,572	6.85	3.36
1935	4,382,753,092	31,863,295	15,348,737	7.27	3.50
1934	3,939,247,066	29,746,890	14,312,500	7.55	3.63
1933	3,568,371,982	27,699,437	12,775,735	7.76	3.58
1932	3,087,635,028	29,196,122	13,096,879	9.46	4.24
1931	4,074,528,222	36,670,058	16,994,029	9.00	4.17
1930	5,420,866,297	43,752,571	20,430,943	8.07	3.77
1929	6,594,488,825	50,487,835	23,764,442	7.66	3.60
1928	7,052,061,971	51,155,773	24,230,696	7.25	3.44
1927	6,571,474,798	48,080,101	23,003,749	7.32	3.50
1926	6,639,159,517	48,169,899	23,296,155	7.26	3.51
1925	6,751,142,456	49,229,743	24,089,199	7.29	3.57
1924	6,548,671,158	50,332,344	24,600,548	7.69	3.76
1923	6,854,336,779	58,164,840	28,087,219	8.49	4.10
1922	6,021,158,972	50,601,691	26,245,365	8.40	4.36
TOTAL 1936- 1939	21,388,022,912	146,029,827	70,641,550	6.83	3.30
TOTAL 1922- 1925	26,175,309,365	208,331,618	103,022,331	7.96	3.94

CALENDAR YEARS 1922 TO 1939, INCLUSIVE

YEAR	REVENUE TON-MILES	FREIGHT OPERATING EXPENSES	FREIGHT TRANSPORTATION EXPENSES	AVERAGES PER 1000 REVENUE TON-MILES	
				FREIGHT OPERATING EXPENSES	FREIGHT TRANSPORTATION EXPENSES
(a)	(b)	(c)	(d)	(e)	(f)
1939	5,621,295,168	\$36,934,950	\$17,511,549	\$6.57	\$3.12
1938	4,712,217,960	33,854,352	16,535,729	7.18	3.51
1937	5,776,545,781	39,086,490	18,880,700	6.77	3.27
1936	5,277,964,003	36,154,035	17,713,572	6.85	3.36
1935	4,382,753,092	31,863,295	15,348,737	7.27	3.50
1934	3,939,247,066	29,746,890	14,312,500	7.55	3.63
1933	3,568,371,982	27,699,437	12,775,735	7.76	3.58
1932	3,087,635,028	29,196,122	13,096,879	9.46	4.24
1931	4,074,528,222	36,670,058	16,994,029	9.00	4.17
1930	5,420,866,297	43,752,571	20,430,943	8.07	3.77
1929	6,594,488,825	50,487,835	23,764,442	7.66	3.60
1928	7,052,061,971	51,155,773	24,230,696	7.25	3.44
1927	6,571,474,798	48,080,101	23,003,749	7.32	3.50
1926	6,639,159,517	48,169,899	23,296,155	7.26	3.51
1925	6,751,142,456	49,229,743	24,089,199	7.29	3.57
1924	6,548,671,158	50,332,344	24,600,548	7.69	3.76
1923	6,854,336,779	58,164,840	28,087,219	8.49	4.10
1922	6,021,158,972	50,604,691	26,245,365	8.40	4.36
TOTAL 1936- 1939	21,388,122,912	146,029,827	70,641,550	6.83	3.30
TOTAL 1922- 1925	26,175,309,365	208,331,618	103,022,331	7.96	3.94
PER CENT OF IMPROVEMENT 4 YEARS 1936 - 1939 COMPARED WITH 4 YEARS 1922 - 1925				14.2	16.2

SOURCE: Annual Reports to Interstate Commerce Commission

NORTHERN PACIFIC RAILWAY COMPANY

FREIGHT SERVICE OPERATING AVERAGES
CALENDAR YEARS 1922, 1924, 1926, 1928, 1930, 1932, 1934, 1936, 1938 AND 1939

LINE NO.	ITEM	1922	1924	1926	1928	1930	1932	1934	1936	1938	1939	PERCENT INCREASE 1939 OVER 1922
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
1	Miles of line operated in freight service,.....	6,398	6,426	6,510	6,435	6,474	6,397	6,410	6,428	6,423	6,423	.4
2	Freight train miles,.....	10,109,782	9,943,098	10,036,695	10,139,395	8,421,621	6,000,916	7,060,112	8,575,733	7,297,121	7,829,099	22.6 *
3	Freight cars per freight train,.....	39.5	43.4	47.9	49.5	46.9	42.1	46.5	45.8	46.7	49.9	26.3
4	Net tons per freight train,.....	711	765	789	830	769	631	702	753	794	873	22.8
5	Average tractive power per locomotive (pounds),.....	36,600	38,110	39,829	42,415	44,793	45,282	46,136	47,634	48,860	49,843	36.2
6	Average capacity per freight car (tons),.....	38.7	39.8	40.3	40.4	41.1	41.2	41.7	42.1	42.8	42.8	10.6
7	Freight train speed (miles per hour)	12.5	12.6	12.7	13.0	13.8	15.2	15.4	15.4	15.8	15.7	25.6
8	Gross ton-miles per freight train-hour,.....	18,813	20,961	22,950	24,498	24,848	24,311	27,133	28,049	30,168	32,408	72.3
9	Net ton-miles per freight train-hour	8,863	9,599	10,062	10,759	10,618	9,563	10,815	11,531	12,469	13,642	53.9
10	Gross ton-miles (exclusive of locomotives and tenders) per ton of fuel,.....	12,763	13,826	12,433	12,186	11,844	11,565	11,191	11,531	12,300	12,967	1.6

* = Decrease

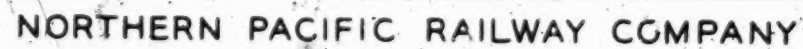
SOURCE: Items 1, 2, 3, 4, 7 and 8 - Reports of freight train performance, Form OS-A, filed with Interstate Commerce Commission.

Item 5 - Total tractive effort divided by total steam locomotives available for service at close of each year as reported in Schedule 417 of annual report to Interstate Commerce Commission.

Item 6 - Aggregate capacity of all freight carrying cars divided by total number of such cars available for service at close of year, as reported in Schedule 417 of annual report to the Interstate Commerce Commission.

Item 9 - Net ton miles divided by train-hours as reported on Form OS-A to Interstate Commerce Commission.

Item 10- Gross ton miles (cars, contents and cabooses) divided by equated net tons of fuel consumed as reported to Interstate Commerce Commission in years 1922 to 1934, inclusive, on Form OS-A and as reported in years 1936, 1938 and 1939 on Forms OS-A and OS-B, respectively.



HEAVY LINE INDICATES TERRITORY COVERED BY TYPICAL FREIGHT TRAIN EXHIBIT.

Defendant's Exhibit No. 51 (Witness H T. Siddeall)
Dec. 3, 1940

ROCK ISLAND LINES
(The Chicago, Rock Island and Pacific Railway Company)
(The Chicago, Rock Island Gulf Railway Company)

FREIGHT OPERATING AND FREIGHT TRANSPORTATION EXPENSES RELATED TO TRAFFIC

Calendar Years 1922 to 1939, Inclusive

Year (a)	Revenue ton-miles (b)	Freight operating expenses (c)	Freight transportation expenses (d)	Averages per 1,000 revenue ton-miles	
				Freight operating expenses (e)	Freight transportation expenses (f)
1939	6,642,392,916	\$45,581,292	\$21,512,545	\$6.86	\$3.24
1938	6,493,304,479	46,321,846	22,627,050	7.13	3.48
1937	7,183,994,544	49,316,242	24,483,374	6.86	3.41
1936	6,495,333,736	48,389,130	23,439,872	7.45	3.61
1935	5,336,307,383	42,216,573	20,785,214	7.91	3.90
1934	5,430,071,821	40,165,202	19,260,991	7.40	3.55
1933	5,094,596,849	37,196,478	18,007,166	7.30	3.53
1932	5,204,739,845	39,274,312	20,099,251	7.55	3.86
1931	7,131,311,627	52,700,067	26,668,416	7.39	3.74
1930	8,481,810,873	65,025,985	33,092,997	7.67	3.90
1929	9,917,562,335	78,642,499	38,612,713	7.93	3.89
1928	9,178,453,177	74,759,670	36,731,003	8.15	4.00
1927	8,589,546,367	74,002,917	36,785,056	8.62	4.28
1926	8,316,601,546	73,382,224	36,093,127	8.82	4.34
1925	7,912,863,362	72,129,796	36,055,436	9.12	4.56
1924	7,853,201,011	71,948,368	37,379,733	9.16	4.76
1923	7,475,438,808	76,129,104	39,343,037	10.18	5.26
1922	6,650,444,419	70,994,026	37,533,740	10.68	5.64
Total 1936-1939	26,815,025,675	189,608,510	92,062,841	7.07	3.43
Total 1922-1925	29,891,947,600	291,201,294	150,311,946	9.74	5.03
Percent of improvement 4 years 1936-1939 compared with 4 years 1922-1925				27.4	31.8

SOURCE: Annual reports to the Interstate Commerce Commission.

Defendant's Exhibit No. 52 (Witness H.F. Siddall)
Dec. 3, 1940

ROCK ISLAND LINES

(The Chicago, Rock Island and Pacific Railway Company)
(The Chicago, Rock Island and Gulf Railway Company)

FREIGHT SERVICE OPERATING AVERAGES
Calendar years 1922, 1924, 1926, 1928, 1930, 1932, 1934, 1936, 1938 and 1939

LINE NO. (a)	ITEM (b)	1922 (c)	1924 (d)	1926 (e)	1928 (f)	1930 (g)	1932 (h)	1934 (i)	1936 (j)	1938 (k)	1939 (l)	PER CENT INCREASE 1939 OVER 1922 (m)
1	Miles of line operated in freight service,....	8,116	8,073	8,024	8,082	8,183	8,340	8,318	8,165	8,010	7,841	Dec. 3.4
2	Freight train miles operated,.....	16,137,256	17,663,927	17,383,909	17,953,705	16,292,149	12,038,785	12,283,671	14,041,648	13,233,715	13,037,107	Dec. 19.2
3	Freight cars per freight train,.....	32.4	35.7	39.1	41.3	41.8	37.8	37.3	35.2	38.1	39.9	23.1
4	Net tons per freight train,.....	503	524	553	584	584	477	485	510	528	553	9.9
5	Average tractive power per locomotive (pounds)	37,198	39,076	41,711	44,000	47,200	49,056	48,575	50,237	51,594	53,293	43.3
6	Average capacity per freight car (tons),.....	38.0	40.4	39.1	40.4	42.5	42.7	43.4	44.1	44.9	45.1	18.7
7	Freight train speed (miles per hour),.....	11.9	12.5	12.8	13.3	14.5	16.5	17.4	17.6	18.3	18.5	55.5
8	Gross ton-miles per freight train-hour,.....	13,821	15,813	17,802	19,750	22,052	22,049	23,289	23,755	26,553	28,131	103.5
9	Net ton-miles per freight train-hour,.....	5,987	6,535	7,092	7,792	8,490	7,968	8,415	8,934	9,654	10,229	70.9
10	Gross ton-miles (exclusive of locomotives and tenders) per ton of fuel,.....	9,764	10,380	11,763	12,425	12,792	12,063	12,316	12,379	13,253	14,049	43.9

SOURCE: Items 1, 2, 3, 4, 7 and 8 - Reports of Freight Train Performance, Form OS-4, filed with Interstate Commerce Commission.

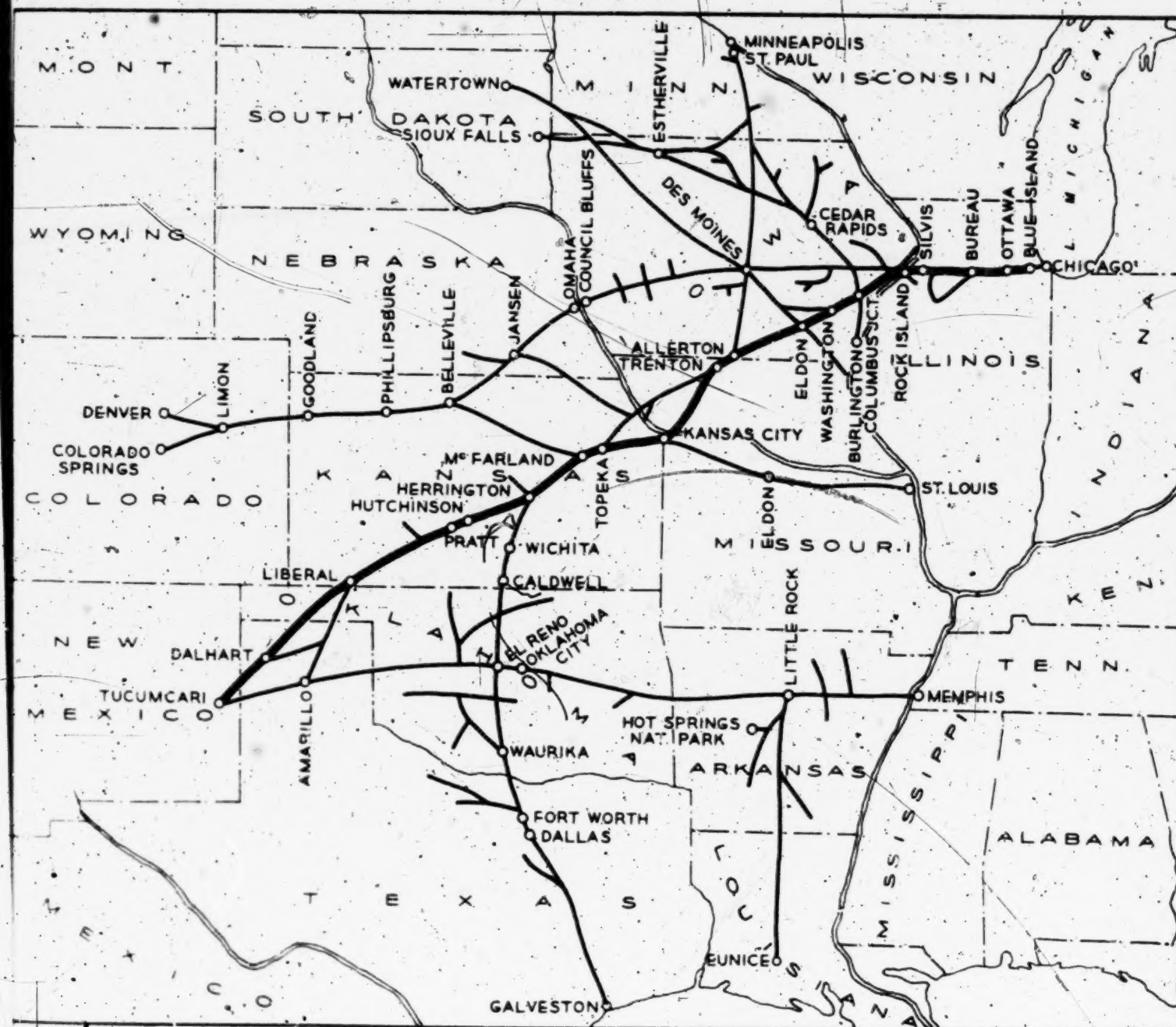
Item 5 - Total tractive effort + total steam locomotives available for service at close of each year as reported in Schedule 417 of Annual Report to the Interstate Commerce Commission.

Item 6 - Aggregate capacity of all freight carrying cars + total number of such cars available for service at close of year, as reported in Schedule 417 of Annual Report to the Interstate Commerce Commission.

Item 9 - Net ton miles + train hours as reported on Form OS-4 to Interstate Commerce Commission.

Item 10 - Gross ton miles (cars, contents and cabooses) + equated net tons of fuel consumed as reported in years 1922, 1924, 1926, 1928, 1930, 1932 and 1934 on Form OS-4 to Interstate Commerce Commission and as reported in years 1936, 1938 and 1939 in Schedule 531 and 571 respectively, of Annual Report to Interstate Commerce Commission.

Defendant's Exhibit No. 53 (Witness H.E. Siddall)
Dec. 3, 1940



CHICAGO, ROCK ISLAND AND
PACIFIC RAILWAY CO.

HEAVY LINE INDICATES TERRITORY
COVERED BY TYPICAL FREIGHT TRAIN EXHIBIT.

Defendant's Exhibit No. 54 (Witness G. W. Oakley)
Dec. 3, 1940

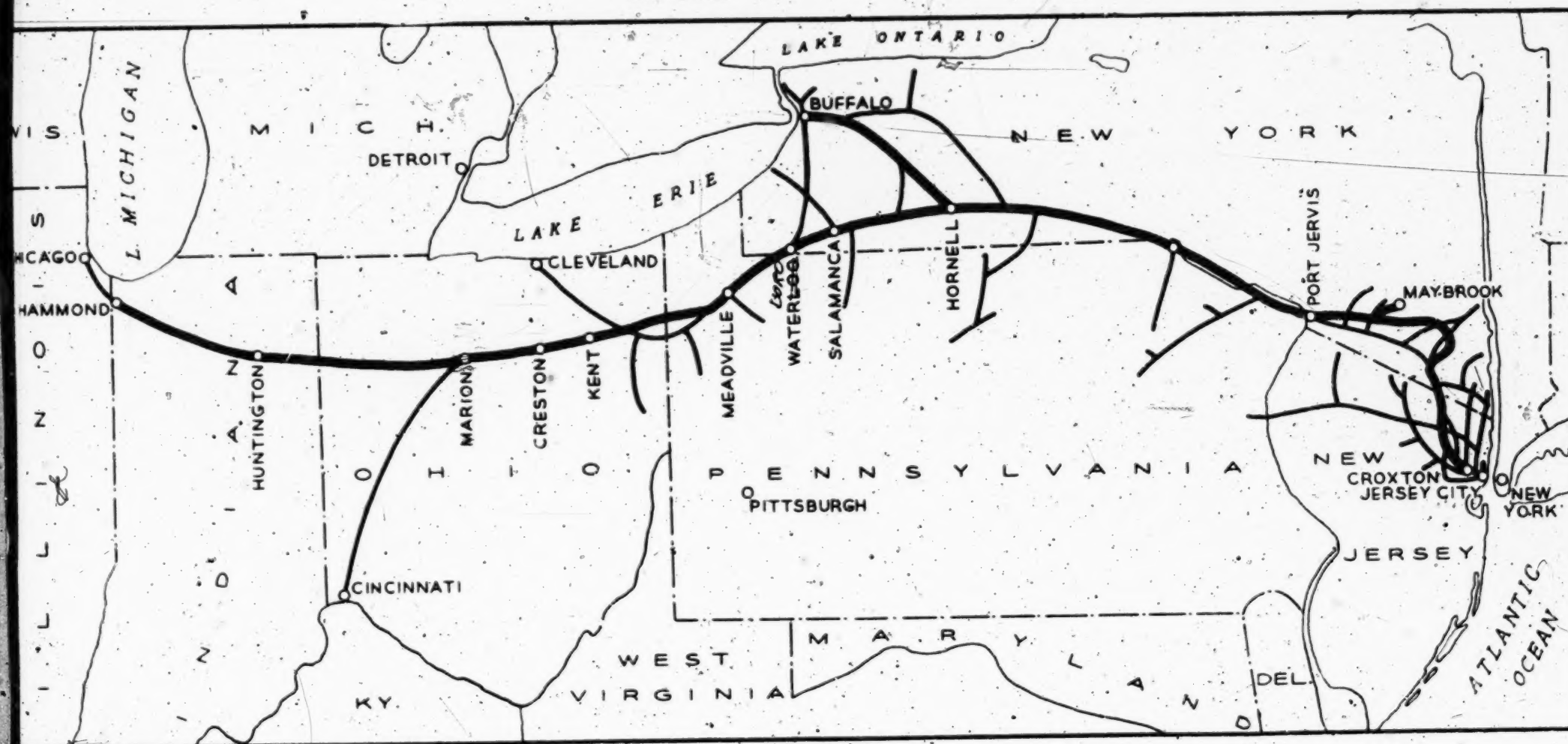
ERIE RAILROAD COMPANY
(Robert E. Woodruff and John A. Hadden, Trustees)
and Chicago and Erie Railroad Company

FREIGHT OPERATING AND FREIGHT TRANSPORTATION EXPENSES RELATED TO TRAFFIC,
Calendar Years 1922 to 1939, inclusive

Year (a)	Revenue ton-miles (b)	Freight operating expenses (c)	Freight transportation expenses (d)	Averages per 1,000 revenue ton-miles	
				Freight operating expenses (e)	Freight transportation expenses (f)
1939	7,320,888,085	\$47,888,238	\$24,573,972	\$6.54	\$3.36
1938	6,239,901,688	44,529,333	22,464,504	7.14	3.60
1937	7,878,247,067	49,306,880	25,379,237	6.26	3.22
1936	7,660,833,886	47,208,453	24,313,497	6.16	3.17
1935	6,760,035,292	43,004,080	22,146,340	6.36	3.28
1934	6,761,789,667	42,325,349	20,928,894	6.26	3.10
1933	6,315,780,730	39,529,891	19,214,616	6.26	3.04
1932	6,199,480,478	41,711,363	20,217,603	6.73	3.26
1931	7,639,912,264	53,105,209	26,291,620	6.95	3.44
1930	9,130,633,042	64,969,930	32,147,930	7.12	3.52
1929	10,770,648,870	76,933,771	37,965,030	7.14	3.52
1928	10,506,738,211	75,375,184	37,697,060	7.17	3.59
1927	10,161,506,219	79,046,757	38,733,206	7.78	3.81
1926	10,407,367,882	78,954,882	38,559,761	7.59	3.71
1925	9,469,280,360	72,861,763	36,133,982	7.69	3.82
1924	9,880,512,589	75,024,968	36,594,514	7.59	3.70
1923	11,363,376,567	86,988,536	41,767,411	7.66	3.68
1922	8,277,801,171	78,557,002	38,721,959	9.49	4.68
Total					
1936-1939	29,099,870,726	188,932,904	96,731,210	6.49	3.32
Total					
1922-1925	38,990,970,687	313,432,269	153,217,866	8.04	3.93
Percent of improvement 4 years 1936-1939 compared with 4 years 1922-1925				19.3	15.5

SOURCE: Annual reports to the Interstate Commerce Commission.

Defendant's Exhibit No. 55 (Witness G.W. Oakley)
Dec. 5, 1940



ERIE RAILROAD COMPANY |

HEAVY LINE INDICATES TERRITORY COVERED BY
TYPICAL FREIGHT TRAIN EXHIBIT.

Defendant's Exhibit No. 56 (Witness G.W. Oakley)
Dec. 3, 1940

ERIE RAILROAD COMPANY
Robert E. Woodruff and John A. Hadden, Trustees
Chicago and Erie Railroad Company

FREIGHT SERVICE OPERATING AVERAGES

CALENDAR YEARS 1922, 1924, 1926, 1928, 1930, 1932, 1934, 1936, 1938 AND 1939

LINE NO. (a)	ITEM (b)	1922 (c)	1924 (d)	1926 (e)	1928 (f)	1930 (g)	1932 (h)	1934 (i)	1936 (j)	1938 (k)	1939 (l)	PER CENT INCREASE 1939 OVER 1922 (m)
1	Miles of road operated,.....	2,309	2,325	2,321	2,317	2,316	2,316	2,311	2,296	2,277	2,299	Dec. .87
2	Train miles (locomotive propelled and motor car trains),.....	10,646,372	11,536,703	12,034,606	10,944,726	9,669,279	7,539,993	7,927,264	8,425,735	7,205,002	7,734,792	Dec. 27.35
3	Freight cars per freight train,.....	49.8	55.0	57.4	68.0	71.9	67.4	66.4	64.8	66.7	67.4	35.3
4	Net tons per freight train,.....	878	955	965	1,043	1,034	903	935	993	973	1,030	17.3
5	Average tractive power per locomotive (pounds),.....	40,971	44,820	46,903	52,615	53,764	54,578	55,213	55,839	55,928	54,724	33.6
6	Average capacity per freight car (tons),.....	41.8	41.7	43.6	44.7	46.8	47.1	48.0	50.8	51.6	51.4	23.0
7	Freight train speed (miles per hour),.....	10.4	11.4	11.5	12.5	13.9	15.5	16.3	16.4	16.8	17.0	63.5
8	Gross ton-miles per freight train-hour,.....	20,031	24,239	25,483	31,570	36,906	38,730	41,013	41,975	44,140	45,742	128.4
9	Net ton-miles per freight train-hour,.....	9,161	10,853	11,125	12,999	14,387	14,031	15,206	16,146	16,233	17,418	90.1
10	Gross ton-miles (exclusive of locomotives and tenders) per ton of fuel,.....	11,469	13,225	13,710	14,643	16,372	16,840	17,043	17,460	18,274	18,127	58.1

SOURCE: Items 1, 2, 3, 4, 7 and 8 - Reports of Freight Train Performance, Form OS-A, filed with Interstate Commerce Commission.

Item 5 - Total tractive effort ÷ total steam locomotives available for service at close of each year as reported in Schedule 417 of Annual Report to the Interstate Commerce Commission.

Item 6 - Aggregate capacity of all freight carrying cars ÷ total number of such cars available for service at close of year, as reported in Schedule 417 of Annual Report to the Interstate Commerce Commission.

Item 9 - Net ton miles ÷ train hours as reported on Form OS-A to Interstate Commerce Commission.

Item 10 - Gross ton miles (cars, contents and cabooses) ÷ equated net tons of fuel consumed as reported in years 1922, 1924, 1926, 1928, 1930, 1932 and 1934 on Form OS-A to Interstate Commerce Commission and as reported in years 1936, 1938 and 1939, in Schedules 531 and 571, respectively, of Annual Report to Interstate Commerce Commission.

Defendant's Exhibit No. 57 (Witness Cakley)
Dec. 4, 1940.

ERIE RAILROAD COMPANY
(Robert E. Woodruff and John A. Hadden, Trustees)
CHICAGO AND ERIE RAILROAD COMPANY

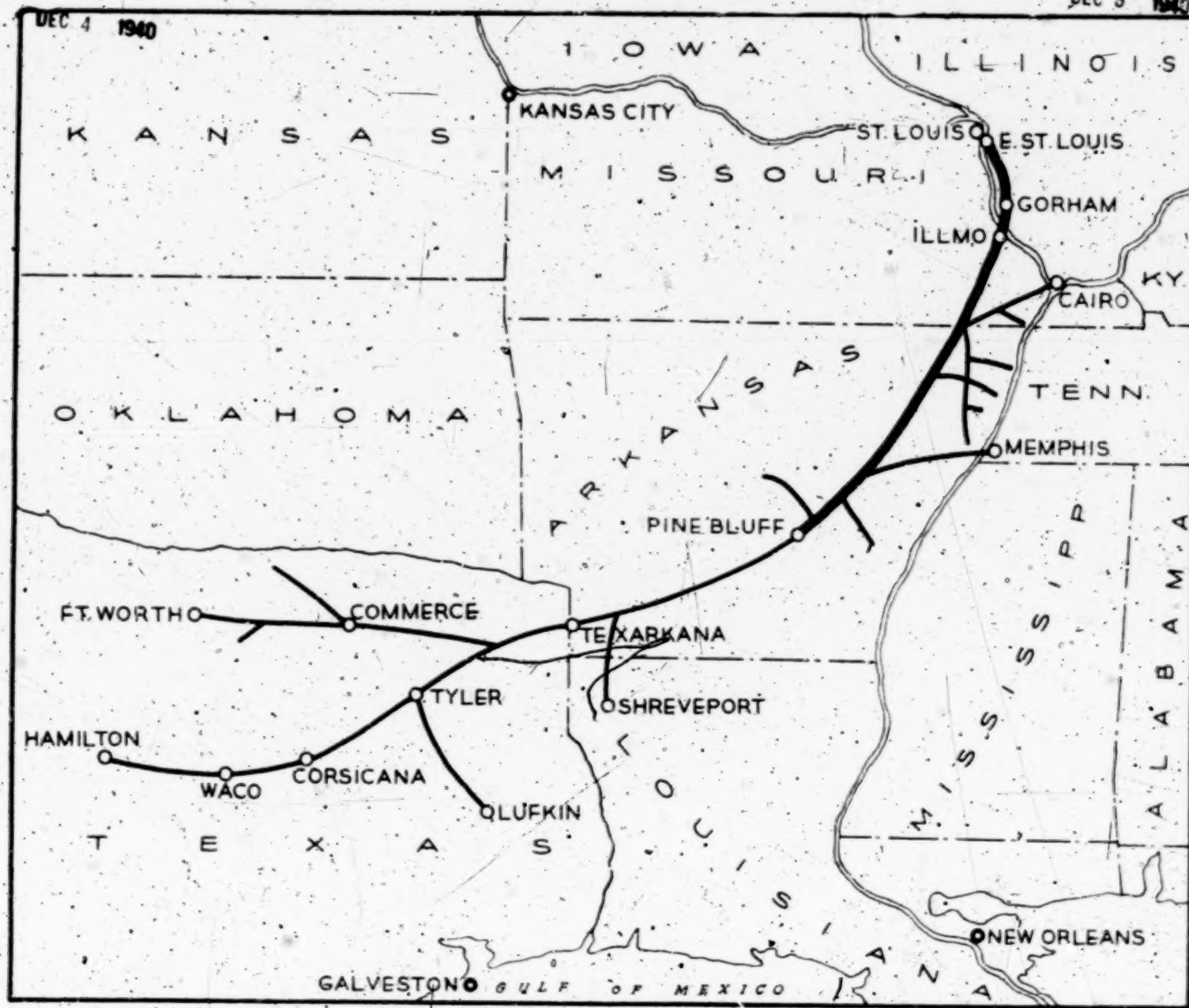
REVENUE FREIGHT CARRIED DURING THE YEAR 1939

Class No.	Commodity Group or Class	Revenue Freight Originating On Respondent's Road		Revenue Freight Received From Connecting Carriers		Total Revenue Freight Carried Carloads
		Terminating On Line	Delivered to Connecting Carriers	Terminating On Line	Delivered to Connecting Carriers	
		Carloads	Carloads	Carloads	Carloads	
Products of Agriculture						
110	Oranges and Grapefruit	-	-	6,803	1,137	7,940
111	Lemons, Limes and citrus fruits N. O. S.	-	-	2,533	344	2,779
120	Apples, fresh	53	80	2,870	343	3,351
121	Bananas	602	1,281	77	7	1,967
122	Berries, fresh	-	6	65	25	96
123	Cantaloupes and melons N. O. S.	-	-	3,836	1,291	5,127
124	Grapes, fresh	522	74	5,464	3,890	9,950
125	Peaches, fresh	3	-	347	47	397
126	Watermelons	-	-	95	-	95
127	Fruits, fresh, domestic N. O. S.	126	25	5,257	923	6,331
128	Fruits, fresh, tropical N. O. S.	-	-	182	90	272
130	Potatoes other than sweet	73	500	1,129	588	2,290
140	Cabbage	11	117	129	231	538
141	Onions	51	247	153	314	770
142	Tomatoes	30	53	103	714	900
143	Vegetables, fresh N. O. S.	24	34	1,839	4,603	6,553

Class No.	Commodity Group or Class	On Respondent's Road		From Respondent's Road		Freight Carried
		Terminating On Line Carloads	Delivered to Connecting Carriers Carloads	Terminating On Line Carloads	Delivered to Connecting Carriers Carloads	
Products of Agriculture						
110	Oranges and Grapefruit	-	-	6,805	1,137	7,940
111	Lemons, Limes and citrus fruits N. O. S.	-	-	2,535	244	2,779
120	Apples, fresh	53	80	2,870	348	3,351
121	Bananas	602	1,281	77	7	1,967
122	Berries, fresh	-	6	65	25	96
123	Cantaloupes and melons N. O. S.	-	-	3,836	1,291	5,127
124	Grapes, fresh	522	74	5,464	3,890	9,950
125	Peaches, fresh	5	-	347	47	397
126	Watermelons	-	-	95	-	95
127	Fruits, fresh, domestic N. O. S.	126	25	5,257	923	6,351
128	Fruits, fresh, tropical N. O. S.	-	-	182	90	272
129	Potatoes other than sweet	73	500	1,129	588	2,290
140	Cabbage	11	117	129	231	538
141	Onions	51	247	158	314	770
142	Tomatoes	30	53	105	714	900
143	Vegetables, fresh N. O. S.	24	34	1,899	4,605	6,553
Total Classes 110 to 143, Inc.		1,485	2,417	30,939	14,505	49,356
Total Products of Agriculture		15,114	16,678	49,997	25,029	106,818
Grand Total, Carload Traffic		157,028	241,695	347,255	191,117	957,123
						5374

SUPERIOR COURT, PIMA CO., ARIZONA
STATE V S.P.CO. NO 20087

Defendant's Exhibit No. 58 (Witness F.H. Millard) WITNESS
Dec. 5, 1940



ST. LOUIS SOUTHWESTERN RAILWAY LINES

BERRYMAN HENWOOD, TRUSTEE

HEAVY LINE INDICATES TERRITORY COVERED
BY TYPICAL FREIGHT TRAIN EXHIBIT.

ST. LOUIS SOUTHWESTERN RAILWAY LINES
BERRYMAN HENWOOD, TRUSTEE

FREIGHT OPERATING AND
FREIGHT TRANSPORTATION EXPENSES
RELATED TO TRAFFIC
CALENDAR YEARS 1922 TO 1939, INCLUSIVE

YEAR	REVENUE TON MILES	FREIGHT OPERATING EXPENSES	FREIGHT TRANSPORTATION EXPENSES	AVERAGES PER 1000 REVENUE TON MILES	
				FREIGHT OPERATING EXPENSES	FREIGHT TRANSP. EXPENSES
(a)	(b)	(c)	(d)	(e)	(f)
1939	1,642,737,108	\$13,130,970	\$5,306,340	\$ 7.99	\$ 3.23
1938	1,611,238,798	11,459,267	5,481,426	7.11	3.40
1937	1,957,399,303	13,663,548	6,126,364	6.98	3.13
1936	1,671,162,217	11,419,589	5,113,962	6.83	3.06
1935	1,318,251,621	9,261,986	4,448,974	7.03	3.37
1934	1,177,451,598	8,376,679	3,971,790	7.11	3.37
1933	1,048,663,798	7,522,571	3,389,435	7.17	3.23
1932	912,910,121	8,619,779	3,608,847	9.44	3.95
1931	1,287,512,343	10,277,710	4,759,892	7.98	3.70
1930	1,639,949,428	13,680,941	6,207,457	8.34	3.79
1929	1,686,142,397	16,129,633	6,397,945	9.57	3.79
1928	1,644,534,997	15,035,188	6,010,479	9.14	3.65
1927	1,395,902,590	13,820,203	5,501,716	9.90	3.94
1926	1,479,328,300	14,612,541	5,594,077	9.88	3.78
1925	1,474,751,588	15,280,103	5,642,807	10.36	3.83
1924	1,423,436,363	15,653,403	5,857,469	10.98	4.12
1923	1,697,769,155	17,576,406	7,070,855	10.35	4.16
1922	1,535,404,954	15,988,494	7,143,670	10.41	4.65
TOTAL 1936- 1939	6,882,537,426	49,673,374	22,028,092	7.22	3.20
TOTAL 1922- 1925	6,131,362,060	64,478,406	25,714,801	10.52	4.19

Defendant's Exhibit No. 60 (Witness F.H. Millard)
Dec. 4, 1940

2911

ST. LOUIS SOUTHWESTERN RAILWAY LINES
BERRYMAN HENWOOD - TRUSTEE

FREIGHT SERVICE OPERATING AVERAGES
CALENDAR YEARS 1922, 1924, 1926, 1928, 1930, 1932, 1934, 1936, 1938 AND 1939

LINE NO. (a)	ITEM (b)	1922 (c)	1924 (d)	1926 (e)	1928 (f)	1930 (g)	1932 (h)	1934 (i)	1936 (j)	1938 (k)	1939 (l)	PERCENT INCREASE 1939 OVER 1922 (m)
1	Miles of line operated in freight service,.....	1,765	1,766	1,737	1,736	1,832	1,902	1,815	1,750	1,689	1,678	4.9 dec.
2	Freight train miles,.....	3,006,820	2,796,576	2,698,889	3,217,095	3,349,365	2,242,974	2,644,438	3,258,037	3,040,960	3,053,800	1.6
3	Freight cars per freight train,.....	36.9	38.2	43.4	43.8	43.4	39.5	41.6	43.7	45.1	45.1	22.2
4	Net tons per freight train,.....	584	579	601	574	536	439	482	560	567	593	1.5
5	Average tractive power per locomotive (pounds),.....	36,095	37,305	37,580	41,056	43,396	43,411	45,306	45,382	46,172	46,738	29.5
6	Average capacity per freight carrying car (tons),.....	32.6	34.7	36.0	37.1	37.6	39.8	40.2	40.3	40.3	40.5	24.2
7	Freight train speed (miles per hour)	10.7	12.4	12.9	14.1	15.9	17.6	18.1	18.1	18.8	19.7	84.1
8	Gross ton-miles per freight train-hour,.....	14,306	16,968	19,541	21,621	24,614	24,227	26,571	28,834	30,760	32,745	128.9
9	Net ton-miles per freight train-hour	6,237	7,161	7,726	8,067	8,552	7,718	8,726	10,127	10,638	11,664	87.2
10	Gross ton-miles (exclusive of locomotives and tenders) per ton of fuel,.....	12,664	13,302	15,312	16,216	16,618	15,680	18,799	17,991	18,282	19,163	51.3

SOURCE: Items 1, 2, 3, 4, 7 and 8 - Reports of Freight Train Performance, Form OS-A, filed with Interstate Commerce Commission.

Item 5 - Total tractive effort ÷ total steam locomotives available for service at close of each year as reported in Schedule 417 of Annual Report to the Interstate Commerce Commission.

Item 6 - Aggregate capacity of all freight carrying cars ÷ total number of such cars available for service at close of year, as reported in Schedule 417 of Annual Report to the Interstate Commerce Commission.

Item 9 - Net ton miles ÷ train hours as reported on Form OS-A to Interstate Commerce Commission.

Item 10 - Gross ton miles (cars, contents and cabooses) ÷ equated net tons of fuel consumed as reported in years 1922, 1924, 1926, 1928, 1930, 1932 and 1934 on Form OS-A to Interstate Commerce Commission and as reported in years 1936, 1938 and 1939 in Schedule 531 and 571, respectively, of Annual Report to Interstate Commerce Commission.

Defendant's Exhibit No. 61 (Witness Millard)
Dec. 4, 1940

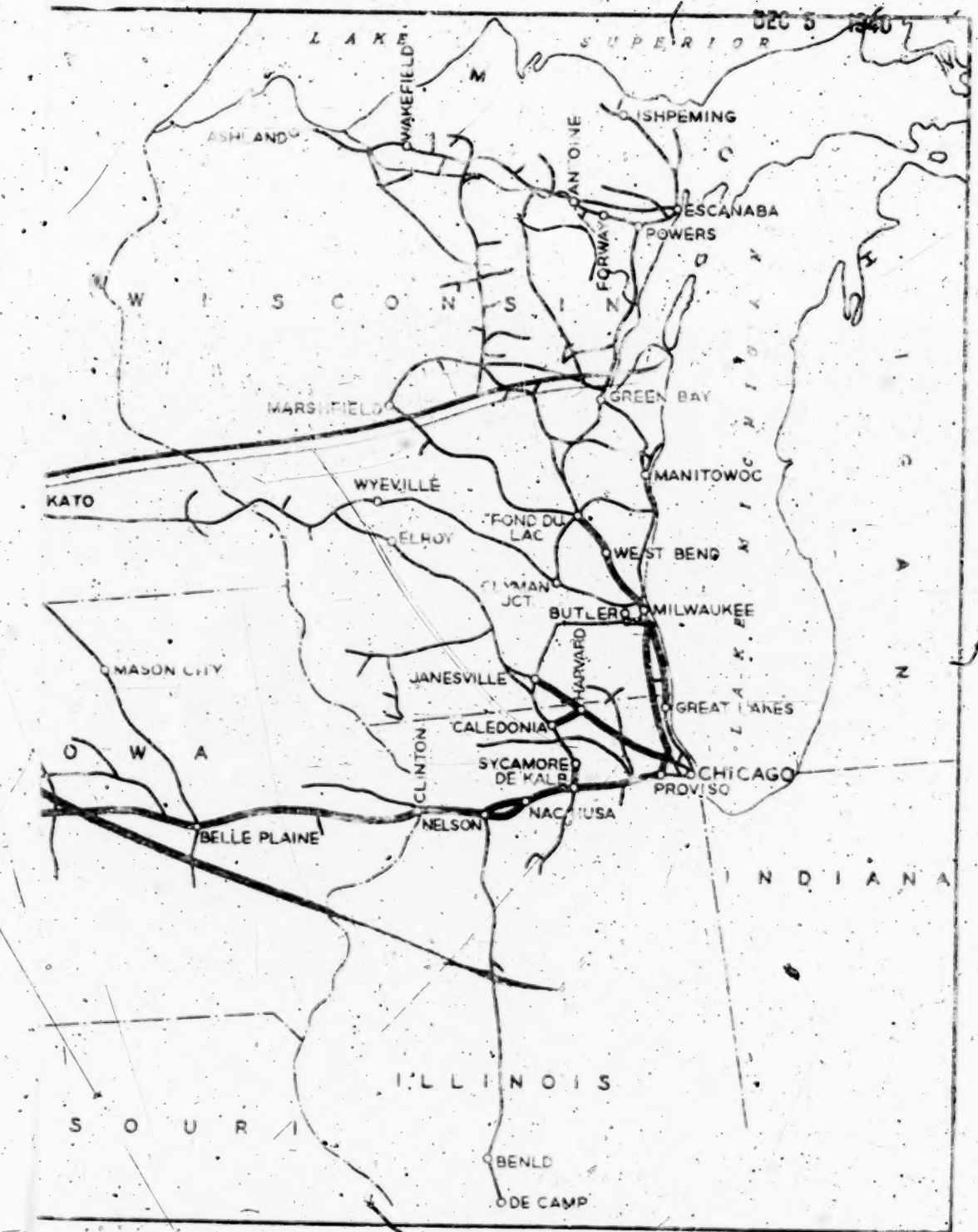
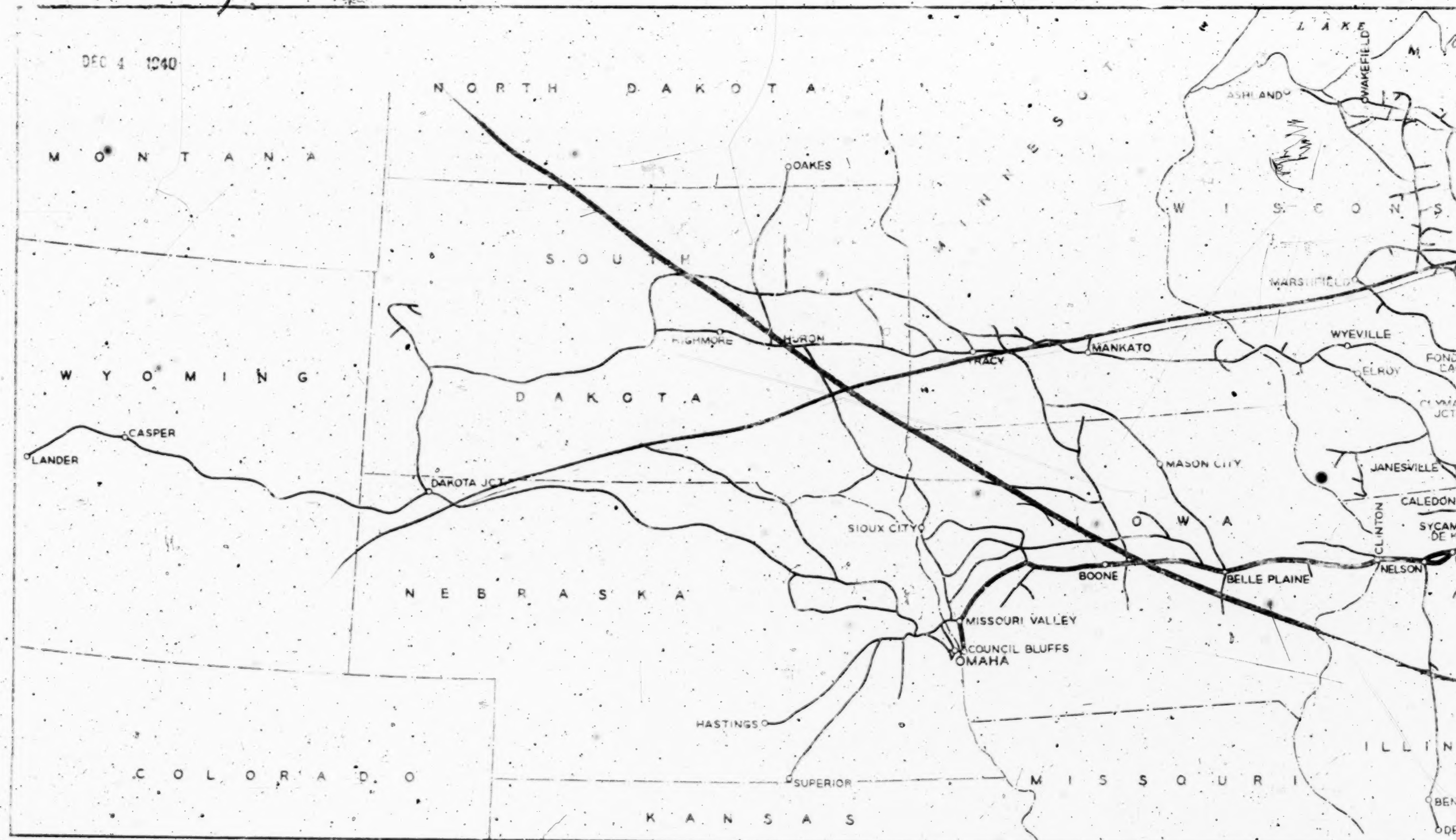
ST. LOUIS SOUTHWESTERN RY. LINES

PERISHABLE CARLOADS, AGRICULTURAL CARLOADS
AND TOTAL CARLOADS

Year 1939

Line	Commodity	ORIGINATING ON LINE		RECEIVED FROM CONNECTIONS		TOTAL
		Terminating On Line	Delivered to Connections	Terminating On Line	Delivered to Connections	
110	Oranges & Grapefruit	-	-	187	2,161	2,328
111	Lemons, Limes & Citrus	-	-	11	488	499
120	Apples, fresh	-	-	187	35	242
121	Bananas	-	-	23	-	23
122	Barries, fresh	-	5	-	-	5
123	Cantaloupes and melons N. O. S.	-	6	37	1,587	1,650
124	Grapes, fresh	-	-	16	98	114
125	Peaches, fresh	8	41	1	2	52
126	Watermelons	5	162	-	21	187
127	Fruits, fresh domestic N.O.S.	-	1	6	41	48
128	Fruits, fresh tropical N. O. S.	-	-	-	1	1
130	Potatoes other than sweet	51	118	462	412	1,043
140	Cabbage	-	-	48	617	665
141	Onions	8	279	64	1,156	1,527
142	Tomatoes	20	835	66	1,449	2,370
143	Vegetables, fresh N. O. S.	4	37	270	6,857	7,168

Line	Commodity	ORIGINATING ON LINE		RECEIVED FROM CONNECTIONS		TOTAL
		Terminating On Line	Delivered to Connections	Terminating On Line	Delivered to Connections	
110	Oranges & Grapefruit	-	-	187	2,161	2,328
111	Lemons, Limes & Citrus	-	-	11	489	499
120	Apples, fresh	-	-	187	55	242
121	Bananas	-	-	23	-	23
122	Berries, fresh	-	5	-	-	5
123	Cantaloupes and melons N. O. S.	-	4	37	1,587	1,630
124	Grapes, fresh	-	-	16	98	114
125	Peaches, fresh	8	41	1	3	52
126	Watermelons	5	162	-	21	187
127	Fruits, fresh domestic N.O.S.	-	1	6	41	48
128	Fruits, fresh tropical N. O. S.	-	-	-	1	1
130	Potatoes other than sweet	51	118	462	412	1,043
140	Cabbage	-	-	48	617	665
141	Onions	8	279	84	1,156	1,527
142	Tomatoes	20	835	66	1,449	2,370
143	Vegetables, fresh N. O. S.	4	37	270	6,857	7,168
	Total Perishables	96	1,483	1,378	14,945	17,902
800	Total Products of Agriculture	3,617	14,561	7,526	20,350	46,054
850	Grand Total Carloads	21,814	63,094	38,606	73,674	197,188



CHICAGO AND NORTH WESTERN RAILWAY COMPANY

HEAVY LINE INDICATES TERRITORY COVERED BY TYPICAL
FREIGHT TRAIN EXHIBIT

Defendant's Exhibit No. 63 (Witness B.M. Snell)
Dec. 4, 1940

CHICAGO AND NORTH WESTERN RAILWAY COMPANY

FREIGHT OPERATING AND
FREIGHT TRANSPORTATION EXPENSES
RELATED TO TRAFFIC
CALENDAR YEARS 1922 TO 1939, INCLUSIVE

YEAR (a)	REVENUE TON MILES (b)	FREIGHT OPERATING EXPENSES (c)	FREIGHT TRANSPORTATION EXPENSES (d)	AVERAGE PER 1000 REVENUE TON MILES	
				FREIGHT OPERATING EXPENSES (e)	FREIGHT TRANSP. EXPENSES (f)
1939	5,793,766,394	\$49,403,955	\$23,445,283	\$ 8.53	\$ 4.05
1938	5,200,389,890	48,043,559	22,779,877	9.24	4.38
1937	6,223,789,247	55,699,868	25,520,496	8.95	4.10
1936	6,171,145,711	53,944,863	24,904,527	8.74	4.04
1935	4,995,873,153	44,668,631	21,055,918	8.94	4.22
1934	4,989,316,625	42,986,519	20,455,448	8.62	4.10
1933	4,581,113,465	39,504,890	19,305,202	8.62	4.21
1932	4,113,578,033	40,929,176	20,434,801	9.95	4.97
1931	5,896,291,065	57,761,627	27,954,897	9.80	4.74
1930	7,570,472,873	69,249,035	34,202,935	9.15	4.52
1929	8,902,539,812	80,329,652	40,102,216	9.02	4.51
1928	8,794,028,562	80,411,293	40,103,002	9.14	4.56
1927	8,590,153,514	80,597,035	40,654,013	9.38	4.73
1926	8,687,781,924	84,433,171	40,995,180	9.72	4.72
1925	8,286,548,010	80,973,947	39,793,188	9.77	4.80
1924	8,290,312,710	85,207,997	42,401,670	10.28	5.12
1923	9,248,615,383	94,503,161	47,258,320	10.22	5.11
1922	7,579,553,676	82,581,674	43,443,870	10.90	5.73
TOTAL 1936- 1939	23,389,091,242	207,092,245	96,650,183	8.85	4.13
YEAR 1922- 1925	33,405,029,779	343,266,779	172,897,048	10.28	5.18

PER CENT OF IMPROVEMENT 4 YEARS 1924 - 1939

CALENDAR YEARS 1922 TO 1939, INCLUSIVE

YEAR	REVENUE TON MILES	FREIGHT OPERATING EXPENSES	FREIGHT TRANSPORTATION EXPENSES	AVERAGE PER 1000 REVENUE TON MILES	
				FREIGHT OPERATING EXPENSES	FREIGHT TRANSP. EXPENSES
(a)	(b)	(c)	(d)	(e)	(f)
1939	5,793,766,394	\$49,403,955	\$23,445,283	\$ 8.53	\$ 4.05
1938	5,200,389,890	48,043,559	22,779,877	9.24	4.38
1937	6,223,789,247	55,699,868	25,520,496	8.95	4.10
1936	6,171,145,711	53,944,863	24,904,527	8.74	4.04
1935	4,995,873,153	44,668,631	21,055,918	8.94	4.22
1934	4,989,316,625	42,986,519	20,455,448	8.62	4.10
1933	4,581,113,465	39,504,890	19,305,202	8.62	4.21
1932	4,113,578,033	40,929,176	20,434,801	9.95	4.97
1931	5,896,291,065	57,761,627	27,954,897	9.80	4.74
1930	7,570,472,873	69,249,035	34,202,935	9.15	4.52
1929	8,902,539,812	80,329,652	40,102,216	9.02	4.51
1928	8,794,028,562	80,411,293	40,103,002	9.14	4.56
1927	8,590,153,514	80,597,035	40,654,013	9.38	4.73
1926	8,687,781,924	84,433,171	40,995,180	9.72	4.72
1925	8,286,548,010	80,973,947	39,793,188	9.77	4.80
1924	8,290,312,710	85,207,997	42,401,670	10.28	5.12
1923	9,248,615,383	94,503,161	47,258,320	10.22	5.11
1922	7,579,553,676	82,581,674	43,443,870	10.90	5.73
TOTAL 1936- 1939	23,389,091,242	207,092,245	96,650,183	8.85	4.13
YEAR 1922- 1925	33,405,029,779	343,266,779	172,897,048	10.28	5.18
PER CENT OF IMPROVEMENT 4 YEARS 1936 - 1939 COMPARED WITH 4 YEARS 1922 - 1925				13.9	20.3

SOURCE: Revenue ton miles - Annual Reports to Interstate Commerce Commission. Freight operating and transportation expenses - Accounting records of the Company to and including year 1935; thereafter Annual Reports to Interstate Commerce Commission.

Re
Defendant's Exhibit No. 64 (Witness B.M. Snell)
Dec. 5, 1940

CHICAGO AND NORTH WESTERN RAILWAY COMPANY

FREIGHT SERVICE OPERATING AVERAGES

Calendar Years 1922, 1924, 1926, 1928, 1930, 1932, 1934, 1936, 1938 & 1939

Line No. (a)	Item (b)	1922 (c)	1924 (d)	1926 (e)	1928 (f)	1930 (g)	1932 (h)	1934 (i)	1936 (j)	1938 (k)	1939 (l)	Percent of Increase 1939 over 1922 (m)
1	Miles of line operated in freight service ...	8 395.81	8 462.83	8 458.91	8 463.21	8 458.52	8 442.61	8 441.27	8 353.34	8 388.13	8 346.00	Dec. 0.59
2	Freight train miles	17 621 842	18 654 692	18 122 839	17 433 997	15 290 767	10 629 389	11 382 715	12 340 658	9 799 574	9 928 769	Dec. 43.66
3	Freight cars per freight train	33.4	36.7	40.0	41.8	42.6	39.0	41.9	41.5	45.8	47.5	42.2
4	Net tons per freight train	512	532	580	597	591	458	527	602	660	723	41.2
5	Average tractive power per locomotive (lbs) .	38 615	41 043	42 249	43 573	44 593	45 611	43 611	47 169	47 730	48 045	24.4
6	Average capacity per freight-carrying car (tons)	40.9	41.7	42.0	43.0	43.9	45.3	45.4	45.7	46.1	46.1	12.7
7	Freight train speed (m.p.h.)	11.8	12.0	12.4	13.1	13.4	14.9	15.4	15.1	16.0	16.1	36.4
8	Gross ton-miles per freight train hour	14 032	15 502	17 728	19 821	20 775	20 772	23 513	24 457	27 865	29 642	111.2
9	Net ton-miles per freight train hour	6 025	6 364	7 195	7 794	7 925	6 810	8 116	9 018	10 172	11 291	87.4
10	Gross ton-miles (exclusive of locomotives and tenders) per ton of fuel	9 860	11 219	12 650	13 662	13 456	13 103	13 486	13 864	15 034	15 372	55.9

SOURCE: Items 1, 2, 3, 4, 7 & 8 - Reports of Freight Train Performance, Form OS-4, filed with Interstate Commerce Commission.

Item 5 - Total tractive effort ÷ total steam locomotives available for service at close of each year, as reported in Schedule 417 of Annual Report to the Interstate Commerce Commission, except for year 1922 which is taken from Accounting records.

Item 6 - Aggregate capacity of all freight carrying cars ÷ total number of such cars available for service at close of year, as reported in Schedule 417 of Annual Report to the Interstate Commerce Commission.

Item 9 - Net ton miles ÷ train hours as reported on Form OS-4 to Interstate Commerce Commission.

Item 10 - Gross ton miles (cars, contents and cabooses) ÷ equated tons of fuel consumed as reported in years 1922, 1924, 1926, 1928, 1930, 1932 and 1934 on Form OS-4 to Interstate Commerce Commission, and as reported in years 1936, 1938, 1939 in Schedule 531 and 571 respectively, of Annual Report to Interstate Commerce Commission.

Defendant's Exhibit No. 65 (Witness Snell)
Dec. 4, 1940

CHICAGO & NORTH WESTERN RAILWAY CO
(Charles M. Thomson, Trustee)

REVENUE FREIGHT CARRIED DURING THE YEAR 1939

Class Commodity Group No. or Class	Revenue Freight Originating On Respondent's Road		Revenue Freight Received From Connecting Carriers		Total Revenue Freight Carried Carloads
	Terminating On Line Carloads	Delivered to Connecting Carriers Carloads	Terminating On Line Carloads	Delivered to Connecting Carriers Carloads	
110 Oranges & Grapefruit	1	3	1,988	2,016	4,008
111 Lemons, Limes & Citrus Fruits N.O.S.	-	1	159	172	332
120 Apples, fresh	34	6	1,535	1,661	3,236
121 Bananas	-	-	2,461	182	2,643
122 Berries, fresh	-	3	191	257	451
123 Cantaloupes & melons N. O. S.	-	-	206	374	660
124 Grapes, fresh	1	9	652	3,183	3,845
125 Peaches, fresh	1	-	445	253	699
126 Watermelons	-	-	496	104	602
127 Fruits, fresh domestic N. O. S.	7	17	824	2,733	3,561
128 Fruits, fresh tropical, N. O. S.	-	-	64	45	109
130 Potatoes other than sweet	950	1,522	6,978	4,552	14,002
140 Cabbage	111	567	327	136	1,145
141 Onions	155	157	713	509	1,534
142 Tomatoes	1	6	251	207	465
143 Vegetables N. O. S.	83	46	2,909	5,321	8,361

Total 110 to 143

Class	Commodity Group No. or Class	Terminating On Line Carloads	Delivered to Connecting Carriers Carloads	Terminating On Line Carloads	Delivered to Connecting Carriers Carloads	Freight Carried Carloads
110	Oranges & Grapefruit	1	5	1,988	2,016	4,008
111	Lemons, Limes & Citrus Fruits N.O.S.	-	1	159	172	332
120	Apples, fresh	34	6	1,535	1,661	3,236
121	Bananas	-	-	2,461	122	2,643
122	Berries, fresh	-	3	191	257	451
123	Cantaloupes & melons N. O. S.	-	-	295	374	669
124	Grapes, fresh	1	9	652	3,183	3,845
125	Peaches, fresh	1	-	445	233	699
126	Watermelons	-	-	496	106	602
127	Fruits, fresh domestic N. O. S.	7	17	824	2,733	3,561
128	Fruits, fresh tropical, N. O. S.	-	-	64	43	109
130	Potatoes other than sweet	980	1,522	6,978	4,552	14,008
140	Cabbage	111	567	327	139	1,145
141	Onions	155	157	93	509	1,534
142	Tomatoes	1	6	251	207	465
143	Vegetables N. O. S.	83	48	2,909	5,321	8,361
Total 110 to 143, Inclusive		1,344	2,539	20,288	21,709	45,690
800	Total Products of Agriculture	42,726	43,367	62,050	30,509	178,632
880	Total Carload Traffic	271,550	331,687	375,401	126,421	1,105,259